

SITE INVESTIGATION REPORT

VOLUME II

FINAL

ALABAMA AIR NATIONAL GUARD 187th FIGHTER GROUP

DANNELLY FIELD MUNICIPAL AIRPORT
MONTGOMERY, ALABAMA

NOVEMBER 1995



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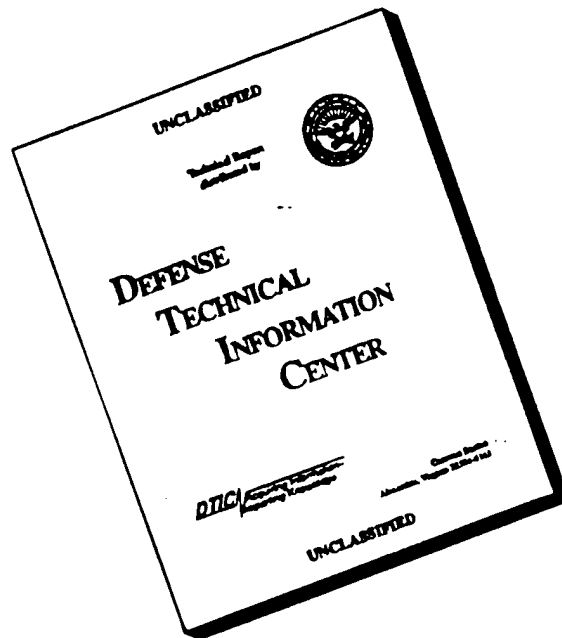
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Appendix A
SOIL GAS/GROUNDWATER SURVEY RESULTS

SOIL GAS AND GROUND WATER SURVEY

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TARGET ENVIRONMENTAL SERVICES, INC.

SOIL GAS AND GROUND WATER SURVEY

ALABAMA AIR NATIONAL GUARD

DANNELLY FIELD

POL FACILITY

MONTGOMERY, ALABAMA

PREPARED FOR

CH2M HILL

2567 FAIRLANE DRIVE

MONTGOMERY, ALABAMA 36116

PREPARED BY

TARGET ENVIRONMENTAL SERVICES, INC.

9180 RUMSEY ROAD

COLUMBIA, MARYLAND 21045

(301) 992-6622

MARCH 1991

EXECUTIVE SUMMARY

On February 19-21, 1991, TARGET Environmental Services, Inc. (TARGET) conducted a soil gas and ground water survey at Alabama Air National Guard Dannelly Field Petroleum, Oil and Lubricant (POL) Facility in Montgomery, Alabama, where underground storage tanks containing JP-4 may have leaked and minor fuel spillage has been reported. Soil gas and ground water headspace samples were analyzed by GC/FID for petroleum hydrocarbons and by GC/ECD for the chlorinated hydrocarbons, trichloroethene (TCE) and tetrachloroethene (PCE).

Elevated levels of Total Volatiles were present in all soil gas and ground water samples. Toluene, ethylbenzene and the xylene isomers were present in all ground water and most soil gas samples. Benzene was the most restricted of the standardized petroleum analytes, particularly in the soil gas phase. The chlorinated hydrocarbons, PCE and TCE, were not present above their detection limit in any of the soil gas or ground water samples collected from the POL facility.

Introduction

CH2M HILL contracted Target Environmental Services, Inc. (TARGET) to conduct a soil gas and ground water survey at the Petroleum, Oil and Lubricant (POL) Facility, Alabama Air National Guard Dannelly Field, Montgomery, Alabama, as part of a site investigation. There is evidence of past leakage from JP-4 underground storage tanks and minor JP-4 spillage has been reported. The purpose of the survey is to aid in the placement of soil borings and monitoring wells. The field phase of the soil gas survey was conducted on February 19-21, 1991.

Detectability

The soil gas survey data presented in this report are the result of precise sampling and measurement of contaminant concentrations in the vadose zone. Analyte detection at a particular location is representative of vapor, dissolved, and/or liquid phase contamination at that location. The presence of detectable levels of target analytes in the vadose zone is dependent upon several factors, including the presence of vapor-phase hydrocarbons or dissolved or liquid concentrations adequate to facilitate volatilization into the unsaturated zone.

Terminology

In order to prevent misunderstanding of certain terms used in this report, the following clarifications are offered:

The term "feature" is used in reference to a discernible pattern in the contoured data. It denotes a contour form rather than a definite or separate chemical occurrence.

The term "occurrence" is used to indicate an area where chemical compounds are present in sufficient concentrations to be detected by the analysis of soil vapors. The term is not indicative of any specific mode of occurrence (vapor, dissolved, etc.), and does not necessarily indicate or suggest the presence of "free product" or "phase-separated hydrocarbons."

The term "anomaly" refers to an area where hydrocarbons were measured in excess of what would normally be considered "natural" or "background" levels.

The term "analyte" refers to any of the hydrocarbons standardized for quantification in the chromatographic analysis.

The term "vadose zone" represents the unsaturated zone between the ground water table and the ground surface.

The term "indicates" is used when evidence dictates a unique conclusion. The term "suggests" is used when several explanations of certain evidence are possible, but one in particular seems more likely. As a result, "indicates" carries a higher degree of confidence in a conclusion than does "suggests."

Field Procedures

Ground water samples were collected at a total of 10 locations at the site, as shown in Figure 1A. To collect the samples a slide hammer was used to advance connected 3' sections of 1" diameter threaded steel casing down to a depth of 6'. Sample 27-W was collected at a depth of 5'. Water was allowed to fill the pipe. A stainless steel bailer was used to collect the water samples. Samples were placed in amber glass vials, sealed, labeled and taken to the mobile laboratory.

A field control sample of water was collected at the beginning of each day's field activities and after the fourth and eighth samples on the second day. This QA/QC sample was obtained using distilled water.

Soil gas samples were collected at a total of 12 locations at the site, as shown in Figure 1B. To collect the samples, a van-mounted hydraulic probe was used to advance connected 3' sections of 1" diameter threaded steel casing down to a depth of 15'. The entire sampling system was purged with ambient air drawn through an organic vapor filter cartridge. A teflon line was inserted into the casing to the bottom of the hole, and the bottom-hole line perforations were isolated from the up-hole annulus by an inflatable packer. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system, packaged, labeled, and taken to

the mobile laboratory for analysis.

Field control samples of soil gas were collected at the beginning and end of each day's field activities. These QA/QC samples were obtained by drawing ambient air through a dust and organic vapor filter cartridge and collecting in the same manner as described above.

Prior to the day's field activities all sampling equipment, slide hammer rods, steel casing and bailers were decontaminated by washing with soapy water and rinsing thoroughly. Internal surfaces were flushed dry using pre-purified nitrogen or filtered ambient air, and external surfaces were wiped clean using clean paper towels.

Laboratory Procedures

All analyses were performed on site in TARGET's climate controlled mobile laboratory.

Headspace of ground water and aqueous standards were prepared by pipetting equal volumes of liquid from the sample containers. Sample containers were placed in a heating block at 75-80°C for 5 minutes prior to injection of a vapor sample from the headspace of the sample container.

All of the soil gas and ground water headspace samples collected during the field phase of the survey were subjected to dual analyses. One analysis was conducted according to EPA Method 601 (modified) on a gas chromatograph equipped with an electron capture detector (ECD), but using direct injection instead of purge and trap. Specific analytes standardized for this analysis were:

- trichloroethene (TCE)
- tetrachloroethene (PCE)

The chlorinated hydrocarbons were chosen because of their common usage in industrial solvents.

The second analysis was conducted according to EPA Method 602 (modified) on a gas chromatograph equipped with a flame ionization detector (FID), but using direct injection instead of purge and trap. The analytes selected for standardization in this analysis were:

- benzene
- toluene
- ethylbenzene
- meta- and para- xylene
- ortho-xylene

These compounds were chosen because of their utility in evaluating the presence of fuel products, or petroleum based solvents.

The FID Total Volatiles values were generated by summing the areas of all chromatogram peaks and calculated using the instrument response factor for toluene. Injection peaks, which also contain the light hydrocarbon methane, were excluded to avoid the skewing of the Total Volatiles (Totals) values due to injection disturbances and biogenic methane. For samples with low hydrocarbon concentrations, the calculated Total Volatiles concentration is occasionally lower than the sum of the individual analytes. This is because the response factor used for the Total Volatiles calculation is a constant, whereas the individual analyte response factors vary with concentration. It is important to understand that the Total Volatiles levels reported are relative, not absolute, values.

Separate standard curves were used for soil gas and ground water headspace. The analytical equipment was calibrated using an instrument-response curve and injection of known concentrations of the above standards. Retention times of the standards were used to identify the peaks in the chromatograms of the field samples and their response factors were used to calculate the analyte concentrations. The tabulated results of the laboratory analyses of the soil gas and ground water headspace samples are reported in parts per billion volume to volume (ppb v/v) in Tables 1 and 2.

Map sample points with no data shown indicate that the analyte concentrations in the sample were below the detection limit.

For QA/QC purposes, a duplicate analysis was performed on every tenth field sample. Laboratory blanks of nitrogen gas (99.999%) were also analyzed after the tenth soil gas sample, while

a laboratory blank of distilled water was analyzed after the tenth ground water headspace sample.

Discussion and Interpretation of Results

In order to provide graphic presentation of the results, ground water data sets in Table 1 have been mapped and contoured to produce Figures 2 through 6. Soil gas data sets in Table 2 have been mapped in Figures 7-12. Soil gas data were not contourable.

Analysis of the ground water via headspace indicated elevated levels of Total Volatile hydrocarbons (Figure 2) in all ground water samples. Benzene and toluene concentrations (Figures 3 and 4) were highest in the northern portion of the POL. Benzene was not present in the ground water above the reported detection limit in samples from the southeastern portion of the POL, while toluene concentrations were relatively low in this area. Ethylbenzene (not mapped), m- and p-xylene (Figure 5) and o-xylene (Figure 6) concentrations were highest in samples collected in the southeastern portion of the site (Stations 23-W and 26-W). GC/ECD analysis of the ground water headspace samples indicated that tetrachloroethene (PCE) and trichloroethene (TCE) were not present above their respective detection limits in any of the samples.

GC/FID analysis of soil gas samples from the periphery of the POL facility revealed elevated levels of Total Volatiles in all soil gas samples. The highest concentration occurred on the eastern side of the facility north of the building (Station 20). Benzene (Figure 8), the most restricted of the standardized analytes, was present at only two locations on the northeastern side of the facility (Stations 18 and 19). The toluene concentration was highest on the western side of the facility at Station 15, with lower levels in some other samples on the western and

northeastern sides. Ethylbenzene, m- and p-xylene and o-xylene levels (Figures 10-12) were relatively high on the eastern side of the facility at Station 20. A relatively high level of m- and p-xylene also occurred on the western side at Station 14. Elevated concentrations of ethylbenzene and m- and p-xylene were observed at many of the remaining sampling locations, while o-xylene was quite restricted in its occurrence. GC/ECD analysis of the soil gas samples indicated that PCE and TCE were not present above their respective detection limits in any of the soil gas samples.

Elevated levels of Total Volatiles were present in all soil gas and ground water samples. Toluene, ethylbenzene and the xylene isomers were present in all ground water and most soil gas samples. Benzene was the most restricted of the standardized petroleum analytes, particularly in the soil gas samples. The chlorinated hydrocarbons, PCE and TCE, were not present above their detection limits in any of the soil gas or ground water samples collected from the POL facility.

TABLE 1

*ANALYTE CONCENTRATIONS IN GROUND WATER VIA HEADSPACE ANALYSIS
CONCENTRATIONS IN PARTS PER BILLION (V/V)

SAMPLE	BENZENE	TOLUENE	ETHYL- BENZENE	m- & p- XYLENE	o- XYLENE	TOTAL VOLATILES ¹	TCE	PCE
23-W	<11	556	20,100	29,290	12,930	361,600	<7.0	<6.0
24-W	<11	384	4,963	4,629	2,963	73,000	<7.0	<6.0
25-W	153	524	14,460	14,240	4,466	366,900	<7.0	<6.0
26-W	<11	723	25,290	24,920	12,060	522,200	<7.0	<6.0
27-W	<11	703	6,905	7,028	3,612	231,600	<7.0	<6.0
28-W	110	3,401	11,530	12,160	6,017	270,400	<7.0	<6.0
29-W	25,810	10,780	17,230	17,150	7,763	478,000	<7.0	<6.0
30-W	16,670	5,956	10,670	5,374	5,606	308,900	<7.0	<6.0
31-W	13,880	129	7,048	6,267	2,163	164,400	<7.0	<6.0
32-W	63	105	1,576	1,840	1,057	35,450	<7.0	<6.0

* BTEX WERE ANALYZED VIA GC/FID AND HALOCARBONS WERE ANALYZED VIA GC/ECD.

TCE = TRICHLOROETHENE

PCE = TETRACHLOROETHENE

¹CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (cont)

*ANALYTE CONCENTRATIONS IN GROUND WATER VIA HEADSPACE ANALYSIS
CONCENTRATIONS IN PARTS PER BILLION (V/V)

SAMPLE	BENZENE	TOLUENE	ETHYL- BENZENE	m- & p- XYLENE	o- XYLENE	TOTAL VOLATILES ¹	TCE	PCE
<u>FIELD CONTROL SAMPLES</u>								
1-W	<11	<11	<11	<11	<11	<11	<7.0	<6.0
2-W	<11	<11	<11	<11	<11	1,636	<7.0	<6.0
3-W	13	11	16	26	24	2,132	<7.0	<6.0
4-W	<11	<11	<11	15	15	131	<7.0	<6.0
5-W	<11	<11	<11	<11	<11	141	<7.0	<6.0

LABORATORY DUPLICATE ANALYSES

32-W	61	105	1,576	1,840	1,057	35,450	<7.0	<6.0
32-WR	39	114	1,974	2,188	1,099	46,630	<7.0	<6.0

LABORATORY BLANKS

BMCHM-1	<11	<11	<11	12	13	407	<7.0	<6.0
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* BTEX WERE ANALYZED VIA GC/FID AND HALOCARBONS WERE ANALYZED VIA GC/ECD.

TCE = TRICHLOROETHENE

PCE = TETRACHLOROETHENE

¹CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 2

* LABORATORY RESULTS OF SOIL GAS SAMPLES
CONCENTRATIONS IN PARTS PER BILLION (V/V)

SAMPLE	BENZENE	TOLUENE	ETHYL- BENZENE	m- & p- XYLENE	o- XYLENE	TOTAL VOLATILES ¹	TCE	PCE
11	<287	<243	<211	<211	<211	2,803	<17	<6.8
12	<287	<243	211	570	<211	33,440	<17	<6.8
13	<287	<243	<211	359	<211	22,320	<17	<6.8
14	<287	316	781	2,110	696	75,940	<17	<6.8
15	<287	3,645	338	844	359	80,030	<17	<6.8
16	<287	<243	<211	359	<211	7,333	<17	<6.8
17	<287	292	253	1,287	232	41,300	<17	<6.8
18	488	340	317	1,456	274	63,940	<17	<6.8
19	545	<243	317	1,245	<211	47,060	<17	<6.8
20	<287	292	1,561	3,587	1,625	141,600	<17	<6.8
21	<287	<243	<211	401	<211	12,000	<17	<6.8
22	<287	<243	<211	422	<211	14,390	<17	<6.8

* BTEX WERE ANALYZED VIA GC/FID AND HALOCARBONS WERE ANALYZED VIA GC/ECD.

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¹CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 2 (cont)

* LABORATORY RESULTS OF SOIL GAS SAMPLES
CONCENTRATIONS IN PARTS PER BILLION (V/V)

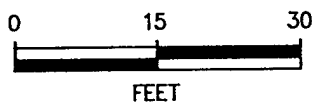
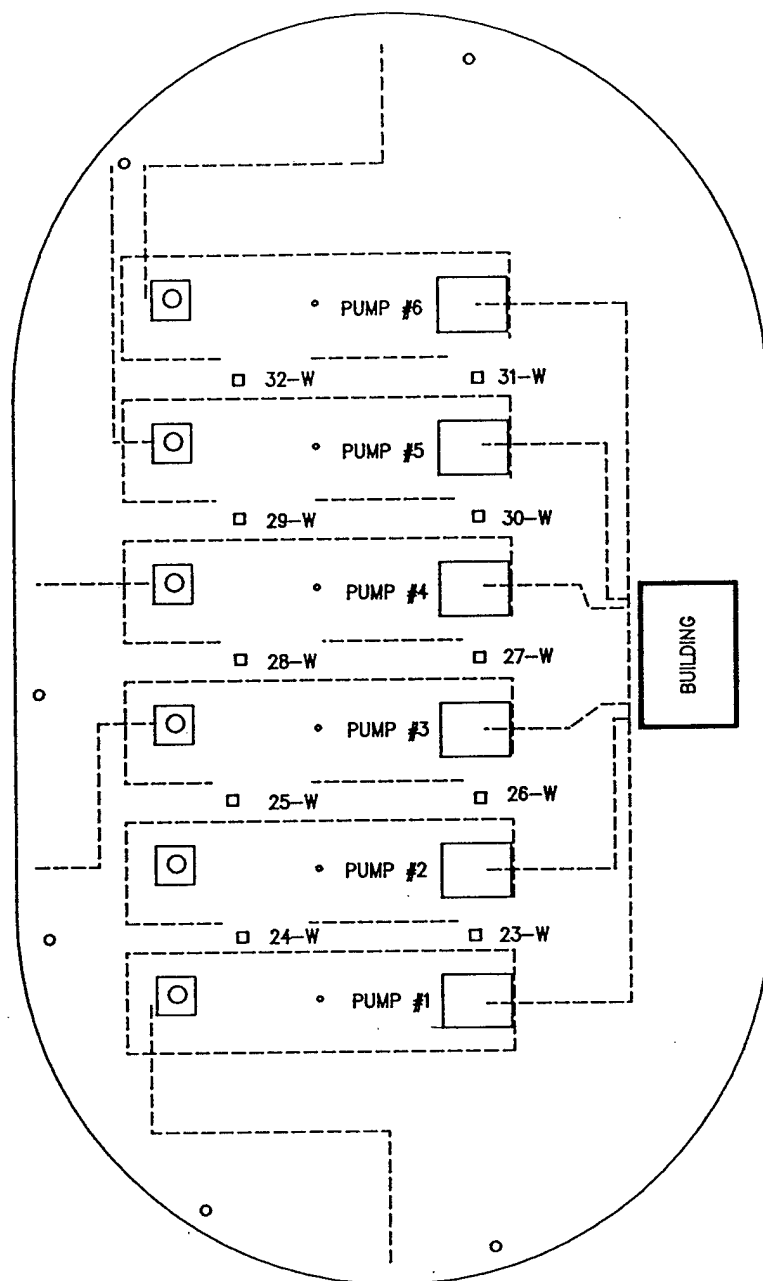
SAMPLE	BENZENE	TOLUENE	ETHYL- BENZENE	m- & p- XYLENE	o- XYLENE	TOTAL VOLATILES ¹	TCE	PCE
<u>FIELD CONTROL SAMPLES</u>								
1	<287	<243	<211	<211	<211	<243	<17	<6.8
2	<287	<243	<211	<211	<211	<243	<17	<6.8
3	<287	<243	<211	<211	<211	<243	<17	<6.8
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<u>LABORATORY DUPLICATE ANALYSES</u>								
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<u>LABORATORY BLANKS</u>								
BMCHM-1	<287	<243	<211	<211	<211	<243	<17	<6.8

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- WATER SAMPLE LOCATION
- TANK FILL

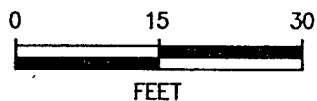
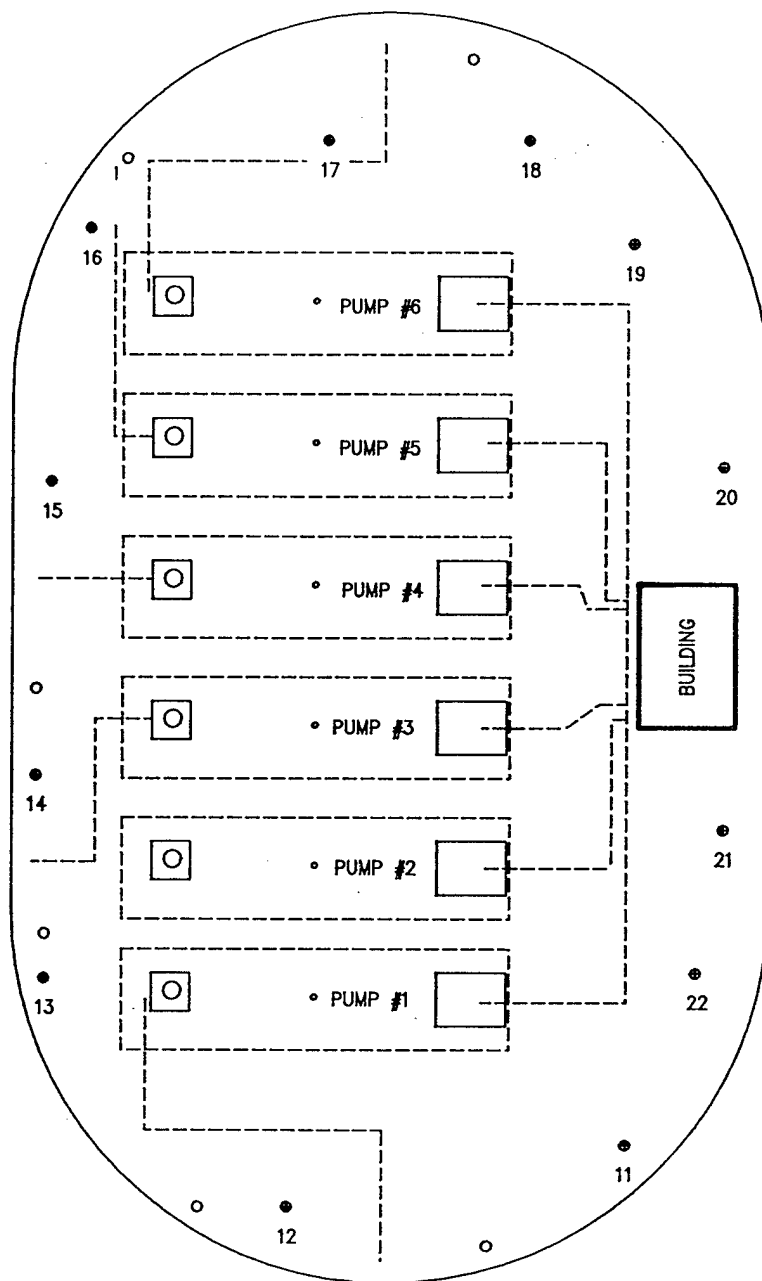
FIGURE 1A. Ground Water Sample Locations



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- SOIL GAS SAMPLE LOCATION
- TANK FILL

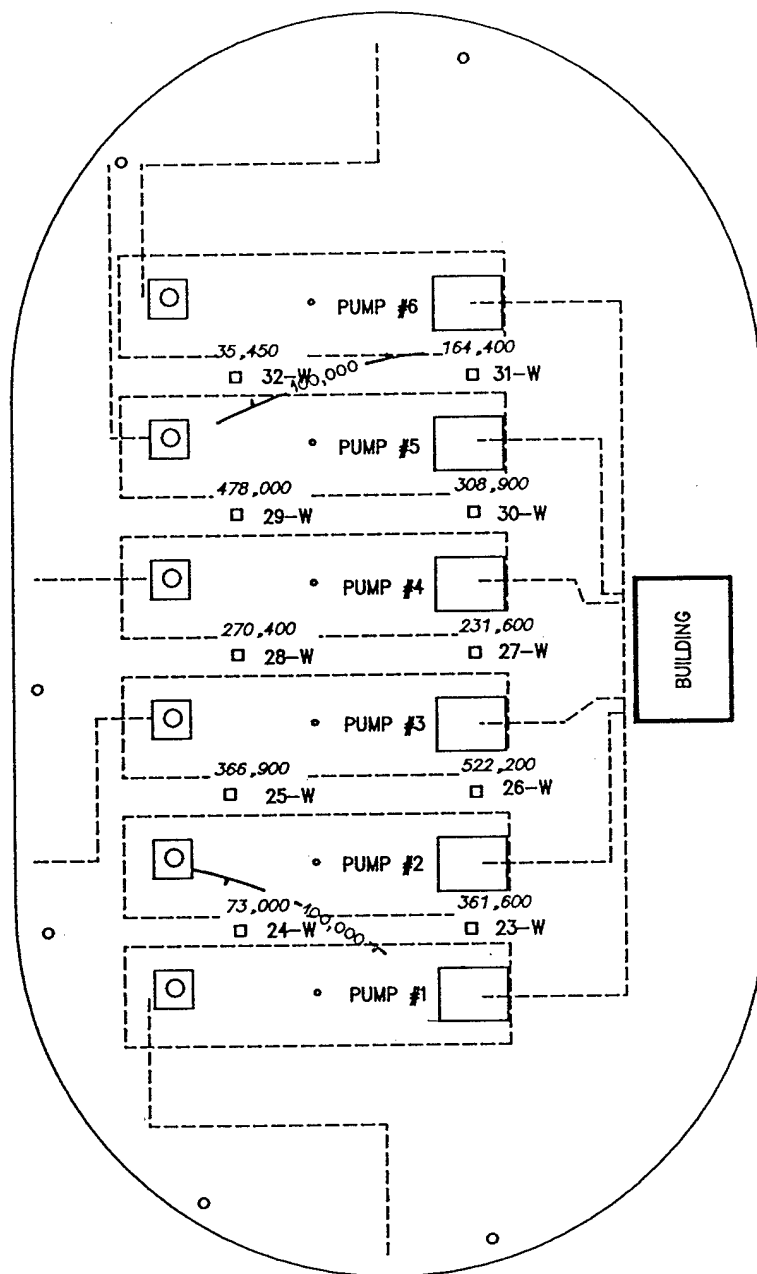
FIGURE 1B. Soil Gas Sample Locations



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0 15 30
FEET

□ WATER SAMPLE LOCATION
○ TANK FILL

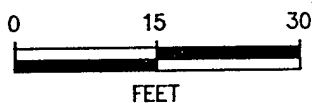
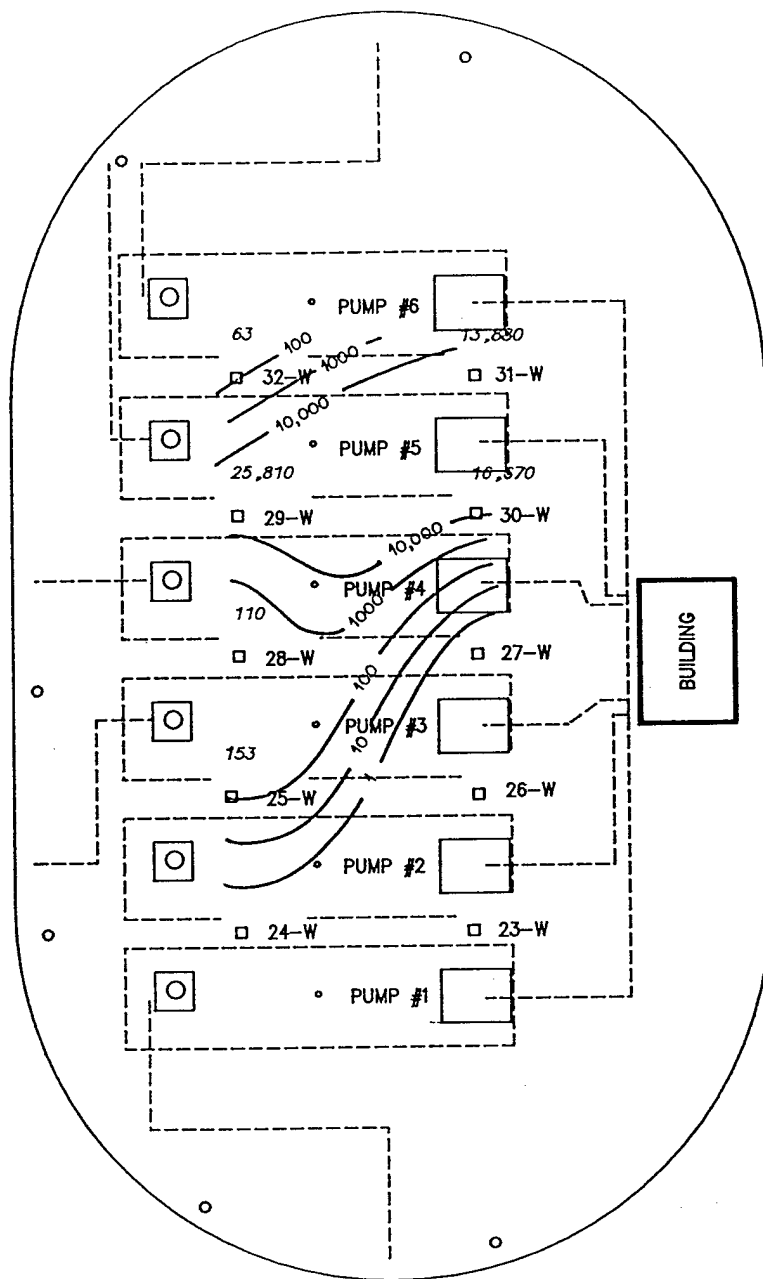


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FIGURE 2. FID Total Volatiles
in Ground Water
(calc'd ppb v/v)

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- WATER SAMPLE LOCATION
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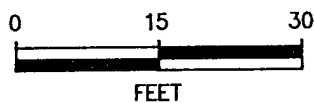
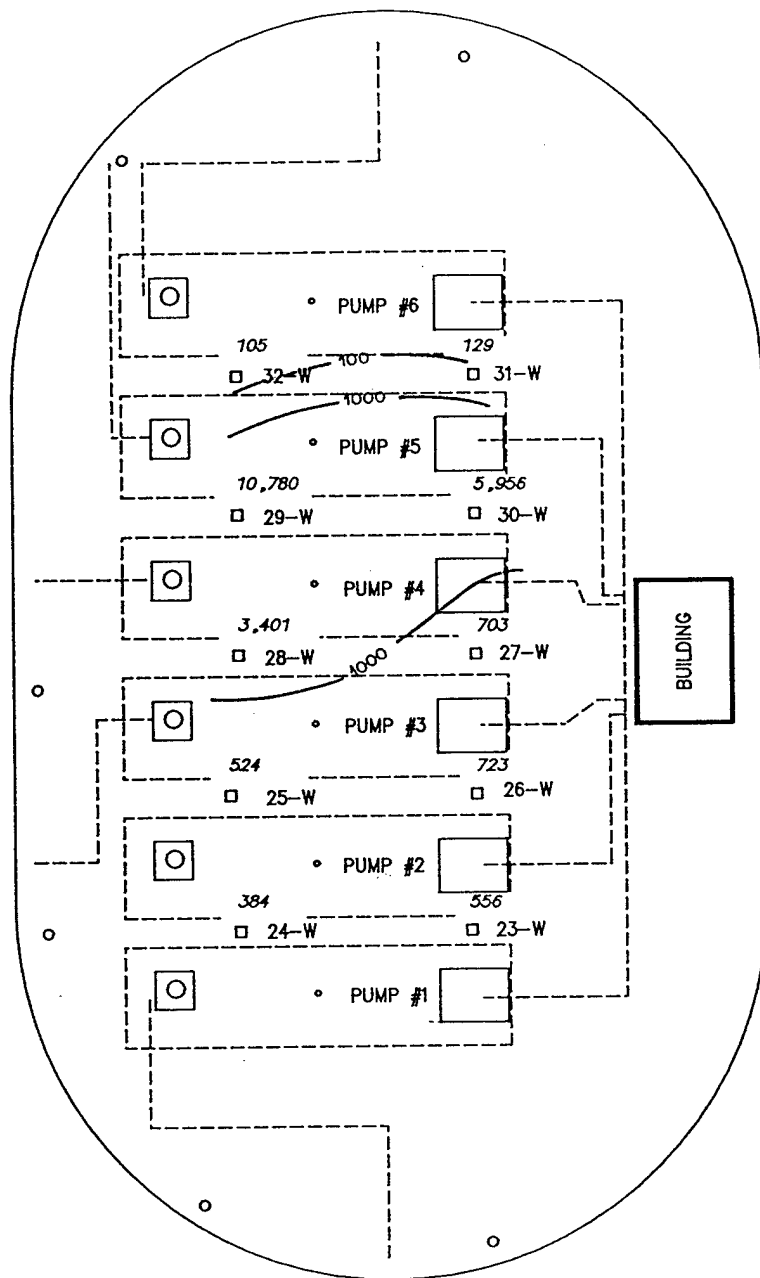
FIGURE 3. Benzene in Ground Water
(ppb v/v)



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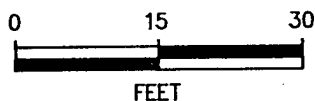
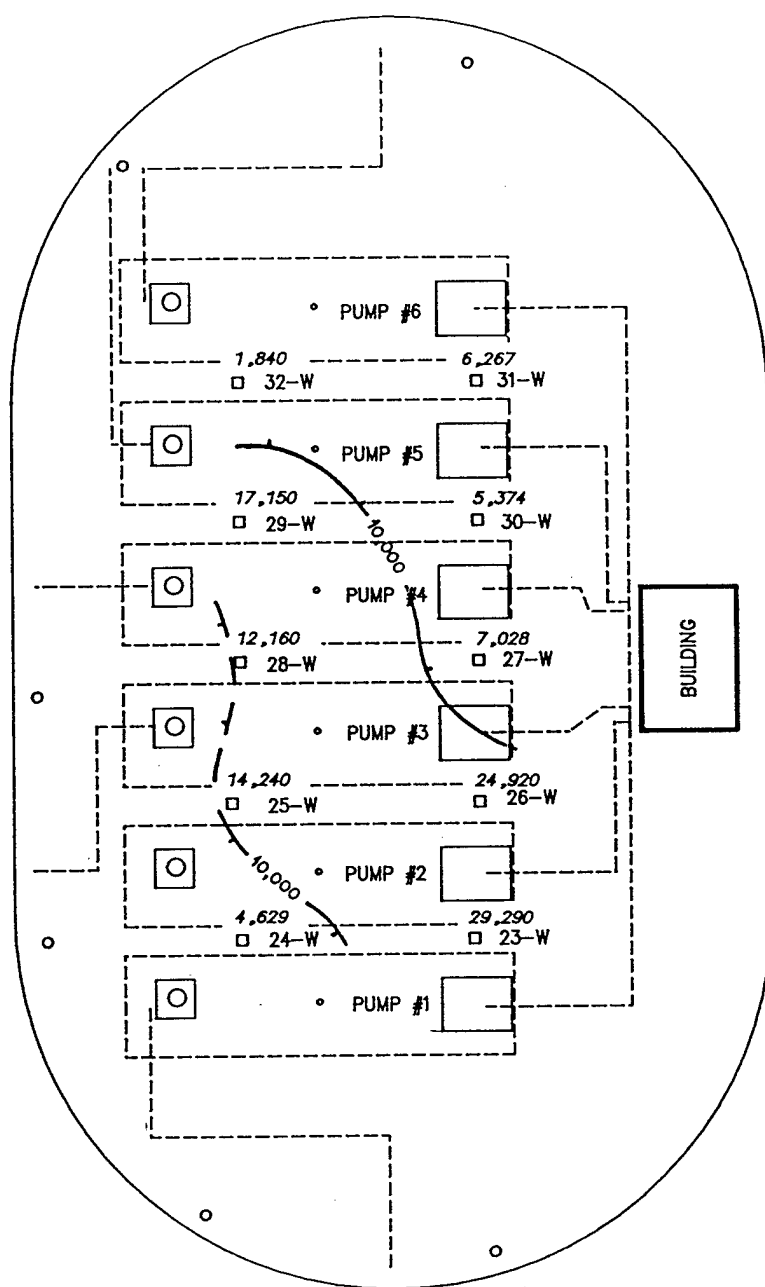
FIGURE 4. Toluene in Ground Water
(ppb v/v)



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- WATER SAMPLE LOCATION
- TANK FILL

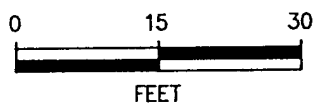
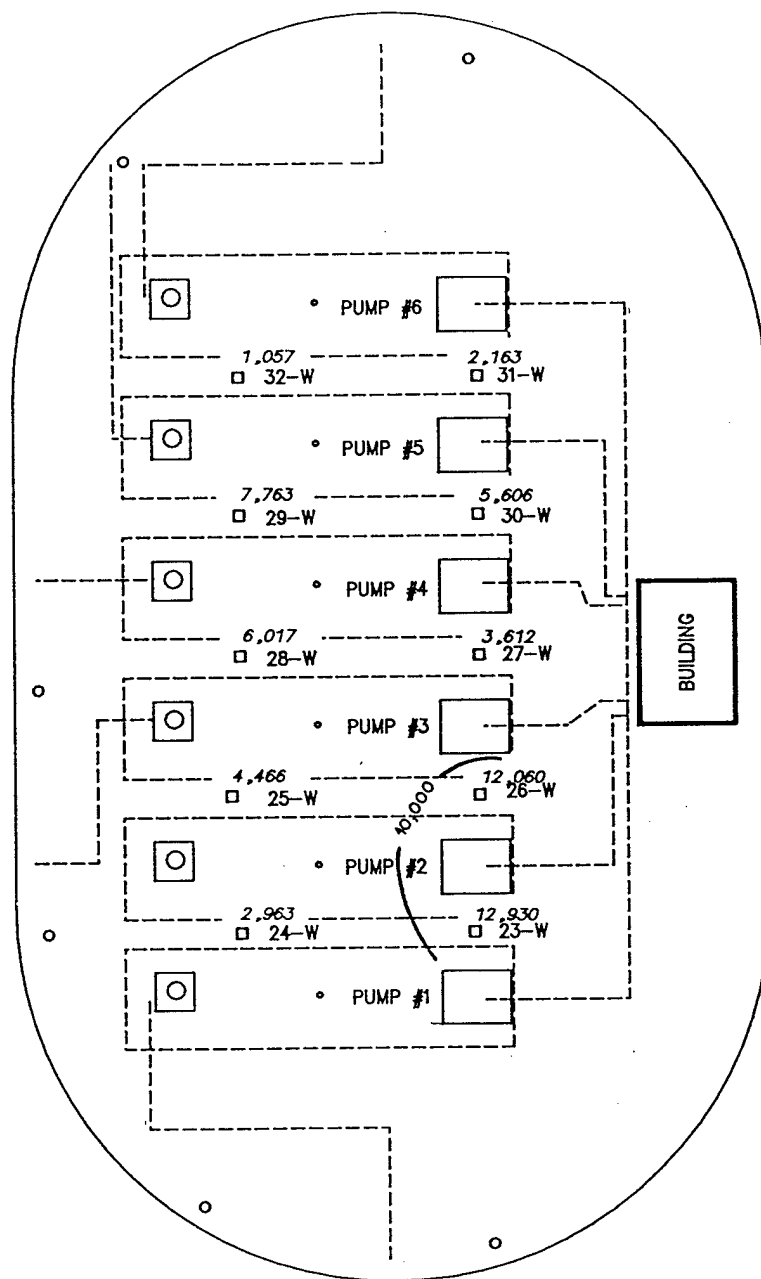
FIGURE 5. meta- and para-Xylene
in Ground Water (ppb v/v)



ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report
and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- WATER SAMPLE LOCATION
- TANK FILL

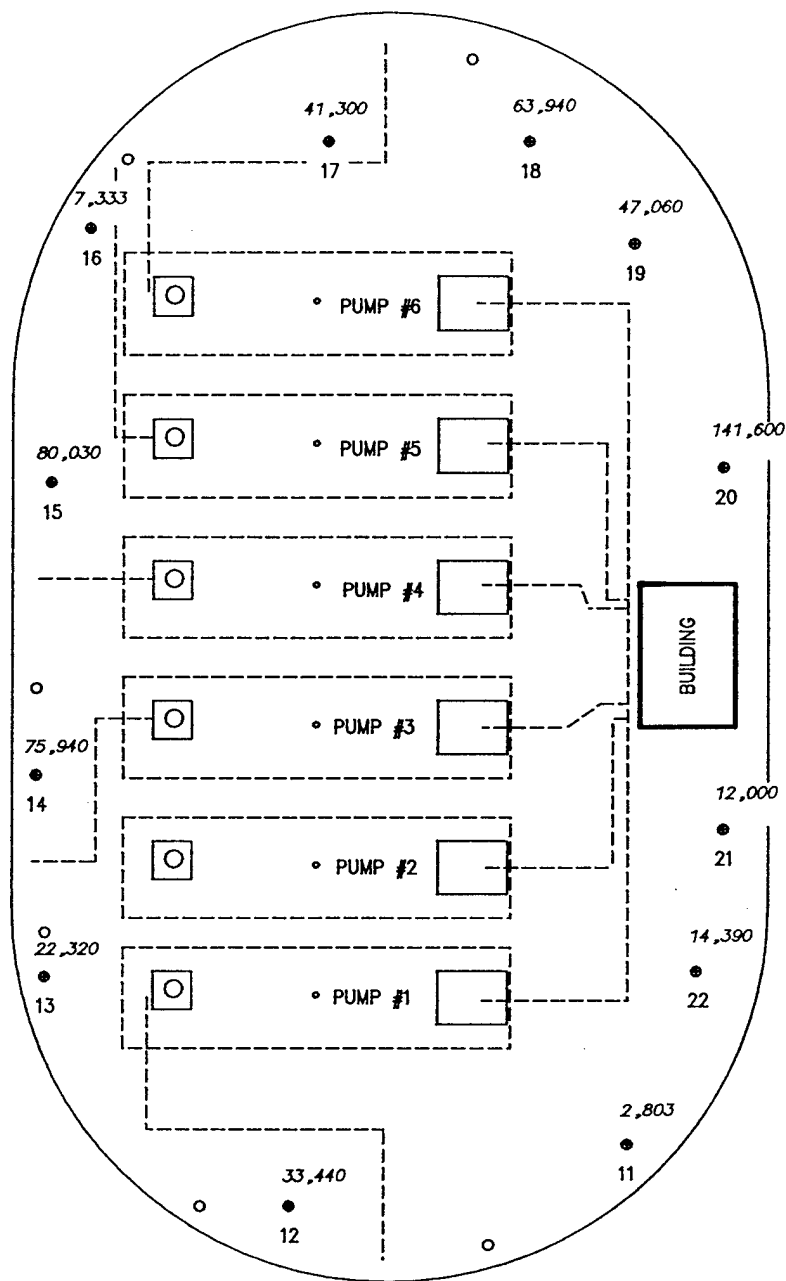


TARGET ENVIRONMENTAL SERVICES, INC.

FIGURE 6. ortho-Xylene in
Ground Water
(ppb v/v)

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POL FACILITY
MONTGOMERY, ALABAMA

This map is integral to a written report
and should be viewed in that context.



0 15 30
FEET

- SOIL GAS SAMPLE LOCATION
- TANK FILL

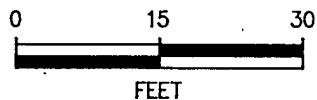
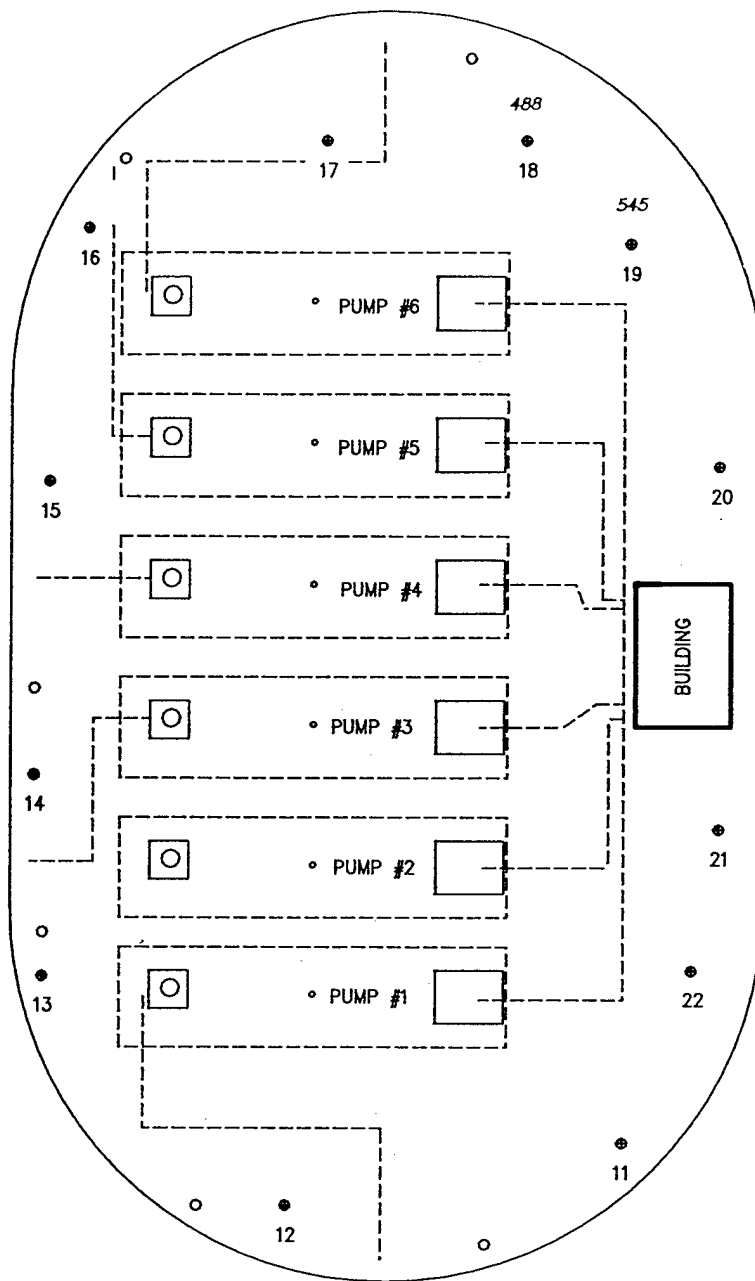
FIGURE 7. FID Total Volatiles
in Soil Gas
(calc'd ppb v/v)



TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report
and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- SOIL GAS SAMPLE LOCATION
- TANK FILL

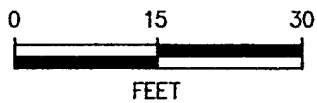
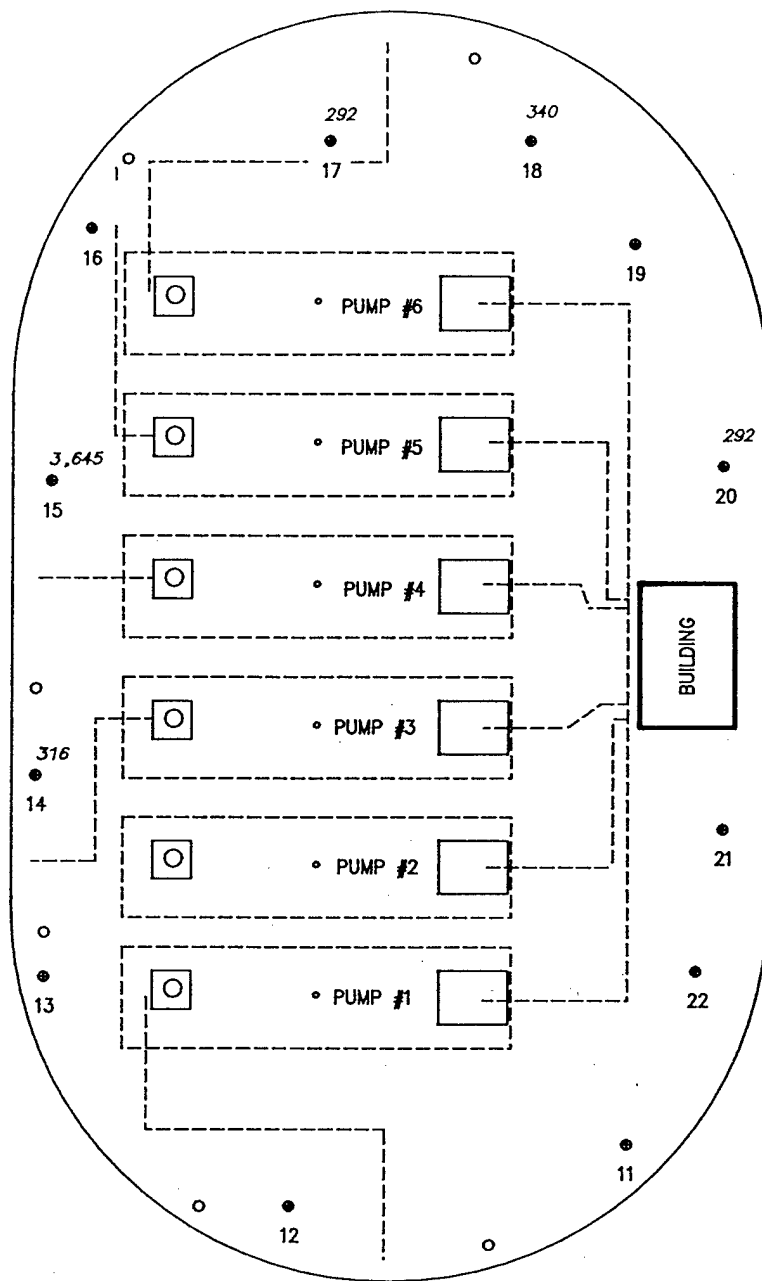
FIGURE 8. Benzene in Soil Gas (ppb)



TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- SOIL GAS SAMPLE LOCATION
- TANK FILL

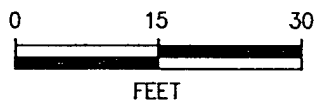
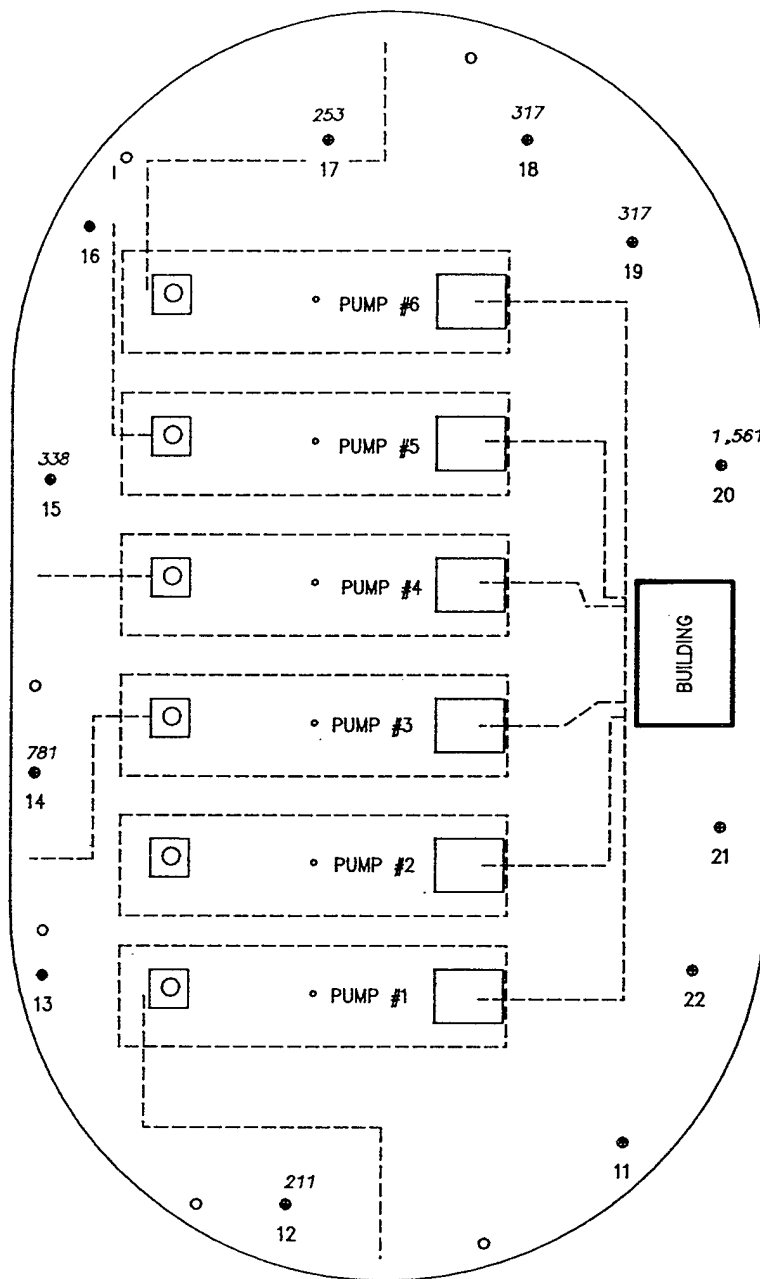
FIGURE 9. Toluene in Soil Gas (ppb)



ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- SOIL GAS SAMPLE LOCATION
- TANK FILL

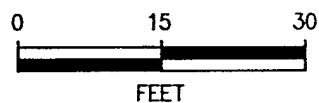
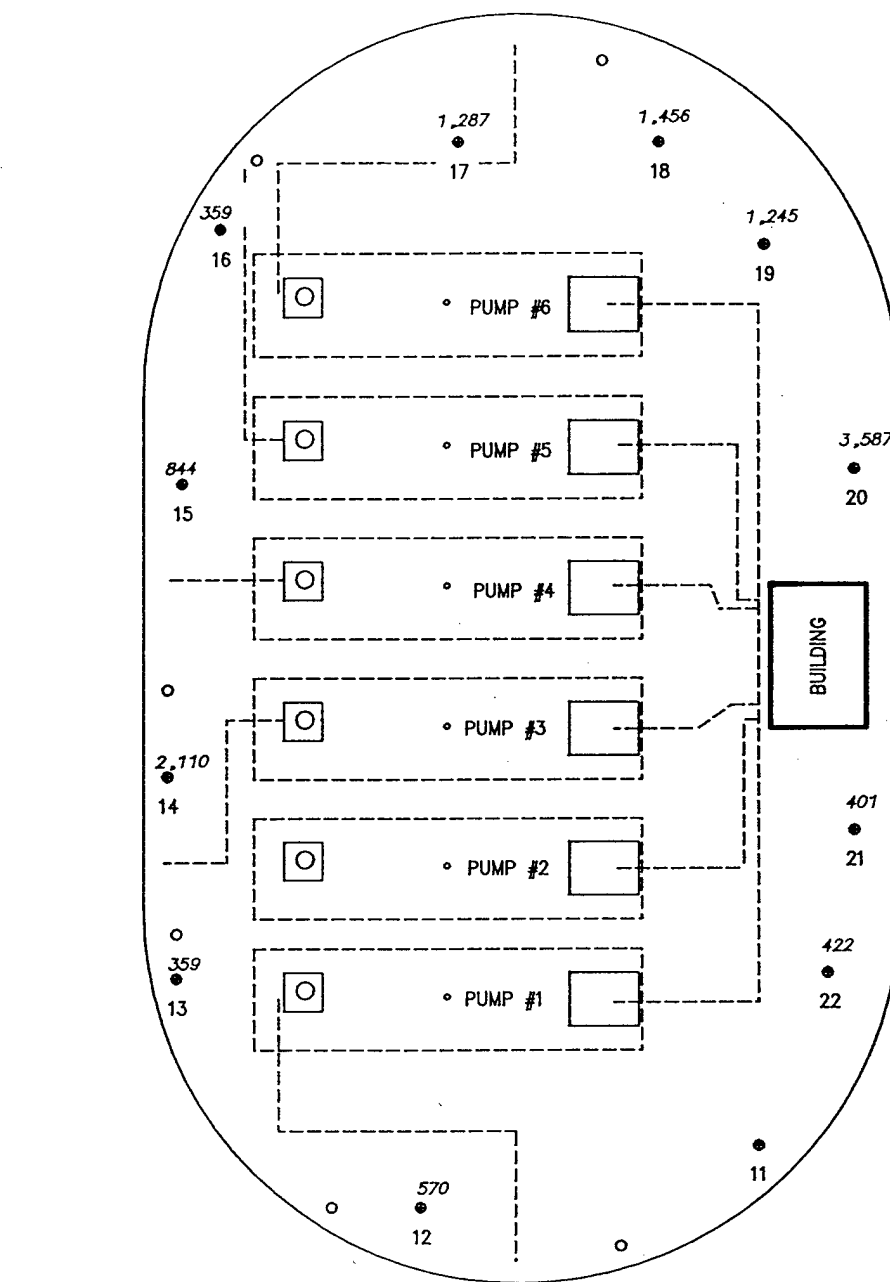
FIGURE 10. Ethylbenzene in Soil Gas (ppb)



ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- SOIL GAS SAMPLE LOCATION
- TANK FILL

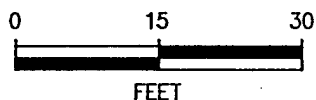
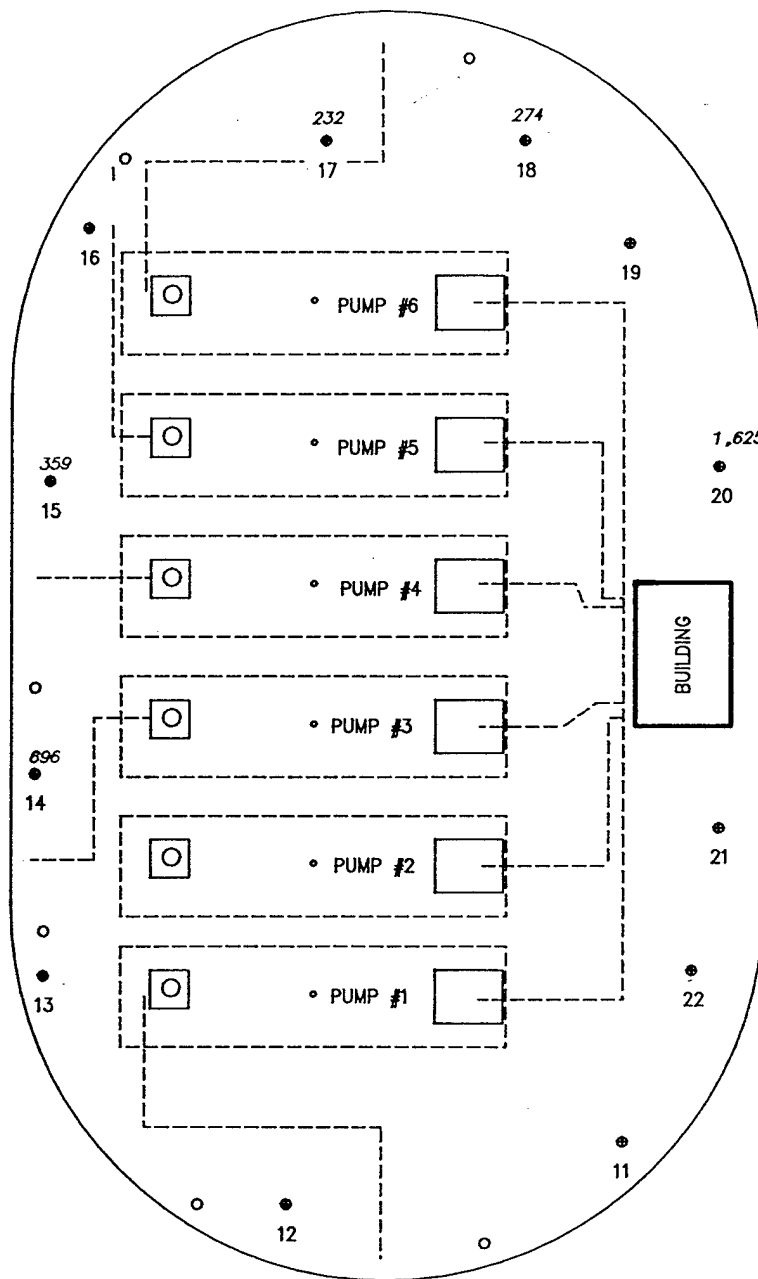
FIGURE 11. meta- and para-Xylene
in Soil Gas (ppb)



ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report
and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA



- SOIL GAS SAMPLE LOCATION
- TANK FILL

FIGURE 12. ortho-Xylene in Soil Gas (ppb)



TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

ALABAMA AIR NATIONAL GUARD
POL FACILITY
MONTGOMERY, ALABAMA

Appendix B
GEOTECHNICAL RESULTS

TTL, Inc.

PRACTICING IN THE GEOSCIENCES

3516 Greensboro Avenue • P.O. Drawer 1128 • Tuscaloosa, Alabama 35403 • Telephone 205-345-0816 • FAX 205-345-0992

SOIL ANALYSES REPORT

**KILMAN BROTHERS, INC.
DANNELLY A.N.G. FIELD
MGM27526.S.I.M.G.
MAY, 1991**

PERMEABILITY DATA

SAMPLE I.D.	DEPTH	PERMEABILITY COEFFICIENT "k"	INSITU DRY UNIT WEIGHT	AS RECEIVED MOISTURE
OWS-3 (Site 2)	8'-10'	2.3×10^{-8} cm/sec	89.7 pcf	31.5 %
OWS-4 (Site 2)	8'-10'	1.3×10^{-8} cm/sec	91.6 pcf	29.0 %
POL-8	10'-12'	7.2×10^{-9} cm/sec	88.3 pcf	34.7 %

CALCIUM CARBONATE DATA

SAMPLE IDENTIFICATION	CALCIUM CARBONATE EQUIVALENT (% CaCO_3)
Box Sample (no label)	35.6 %

TTL, Inc.

Britette L. Lee
Britette L. Lee, Geologist

Appendix C
SUMMARY TABLES OF ANALYTICAL DATA

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B1P-S-0-2	B1P-S-8.5-10	B1P-S-18.5-20	B1P-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
Volatile Compounds	MCL	CRDL	Action Levels				
	ug/L	ug/kg	ug/kg	ug/L			
2-Butanone	N/A	10	N/A/N/A				
Acetone	N/A	10	8E+06/4,000	16 B	33 B	110 B	55 B
Carbon Disulfide	N/A	5	8E+06/4,000				
Ethyl Benzene	7E+02	5	8E+06/4,000				
Methylene Chloride	N/A	5	90,000/5	8 B	31 B	35 B	33 B
Toluene	1E+03	5	2E+08/10,000				
Xylene (total)	1E+04	5	2E+08/70,000				
Chloromethane	N/A	10	N/A/N/A				
Bromomethane	N/A	10	100,000/N/A				
Vinyl Chloride	2	10	N/A/N/A				
Chloroethane	N/A	10	N/A/N/A				
1,1-Dichloroethene	N/A	5	N/A/N/A				
Acrylonitrile	N/A		1000/0.06				

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg (soil) and ug/L (water).

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama^(a)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
	MCL ug/L	CRDL ug/kg	Action Level ug/kg/ug/L				
Volatile Compounds	N/A	5	N/A/N/A				
1,1-Dichloroethane	N/A	5	8,000/N/A				
1,2-Dichloroethene (total)	N/A	5	N/A/N/A				
Chloroform	1E+02	5	N/A/N/A				
1,2-Dichloroethane	5	5	20,000/400				
1,1,1-Trichloroethane	2E+02	5	2E+06/700				
Carbon Tetrachloride	5	5	N/A/N/A				
Vinyl Acetate	N/A	10	N/A/N/A				
Bromodichloromethane	1E+02	5	500/0.02				
1,2-Dichloropropane	5	5	N/A/N/A				
cis-1,3-Dichloropropene	N/A	5	40,000/20				
Trichloroethene	5	5	2E+06/700				
Dibromochloromethane	N/A	5	2E+06/7,000				

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL. Value detected is greater than zero but less than the CRDL. Applies to organic data only. A report in the corresponding alternate column.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit (MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg (soil) and ug/L (water).

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B1P-S-0-2	B1P-S-8.5-10	B1P-S-18.5-20	B1P-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
Sample Date	MCL	CRDL	Action Levels				
Volatile Compounds	ug/L	ug/kg	ug/kg/ug/L				
1,1,2-Trichloroethane	5	5	100,000/6.0				
Benzene	5	5	N/A/N/A				
trans-1,3-Dichloropropene	N/A	5	20,000/400				
Bromoform	1E+02	5	2E+06/700				
4-Methyl-2-Pentanone	N/A	10	N/A/N/A				
2-Hexanone	N/A	10	N/A/N/A				
Tetrachloroethene	5	5	N/A/N/A				
1,1,2,2-Tetrachloroethane	N/A	5	40,000/20				
Chlorobenzene	N/A	5	2E+06/700				
Styrene	1E+02	5	2E+06/7,000				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit (MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg (soil) and ug/L (water).

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID										
Lab Sample Number										
Matrix										
Sample Date										
	MCL	CRDL	CRDL	CRDL	Action Levels					
Volatile Compounds	ug/L	ug/kg	ug/L	ug/L	ug/kg/ug/L					
2-Butanone	N/A	10	10	10	N/A/N/A					
Acetone	N/A	10	10	10	8E+06/4,000					
Carbon Disulfide	N/A	5	5	5	8E+06/4,000					
Ethyl Benzene	7E+02	5	5	5	8E+06/4,000					
Methylene Chloride	N/A	5	5	5	90,000/5					
Toluene	1E+03	5	5	5	2E+08/10,000					
Xylene (total)	1E+04	5	5	5	2E+08/70,000					
Chloromethane	N/A	10	10	10	N/A/N/A					
Bromomethane	N/A	10	10	10	100,000/N/A					
Vinyl Chloride	2	10	10	10	N/A/N/A					
Chloroethane	N/A	10	10	10	N/A/N/A					
1,1-Dichloroethene	N/A	5	5	5	N/A/N/A					
Acrylonitrile	N/A				1,000/0.06					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg (soil) and ug/L (water).

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

(a) - Data reported in ug/kg (soil) and ug/L (water).

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D	BG-MW-6	BG-2P
Lab Sample Number	28909005	28909006	28909007	28909008	18301001	18311001
Matrix	SOIL	SOIL	SOIL	SOIL	WATER	WATER
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	4/10/91	4/12/91
	MCL	CRDL	CRDL	Action Levels		
Volatile Compounds	ug/L	ug/kg	ug/L	ug/kg/ug/L		
trans-1,3-Dichloropropene	N/A	5	5	20,000/400		
Bromoform	1E+02	5	5	2E+06/700		
4-Methyl-2-Pentanone	N/A	10	10	N/A/N/A		
2-Hexanone	N/A	10	10	N/A/N/A		
Tetrachloroethene	5	5	5	N/A/N/A		
1,1,2,2-Tetrachloroethane	N/A	5	5	40,000/20		
Chlorobenzene	N/A	5	5	2E+06/700		
Styrene	1E+02	5	5	2E+06/7,000		

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg (soil) and ug/L (water).

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama (b)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
Semi-volatile Compounds	Action Levels						
	CRDL ug/kg	ug/kg					
Fluoranthene	330	N/A					
Phenanthrene	330	N/A					
Pyrene	330	N/A					
bis(2-Ethylhexyl)-phthalate	330	50,000					
Phenol	330	5E+07					
bis(2-Chloroethyl)Ether	330	600					
2-Chlorophenol	330	400,000					
1,3-Dichlorobenzene	330	N/A					
1,4-Dichlorobenzene	330	N/A					
Benzyl Alcohol	330	N/A					
1,2-Dichlorobenzene	330	N/A					
2-Methylphenol	330	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	BIP-S-8.5-10	BIP-S-8.5-10	BIP-S-13.5-15	BIP-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91	2/27/91
Semivolatile Compounds	CRDL ug/kg	Action Levels ug/kg						
bis(2-Chloroisopropyl)Ether	330	N/A						
4-Methylphenol	330	N/A						
N-Nitroso-di-n-propylamine	330	100						
Hexachloroethane	330	80,000						
Nitrobenzene	330	40,000						
Isophorone	330	2E+06						
2-Nitrophenol	330	N/A						
2,4-Dimethylphenol	330	N/A						
Benzoic Acid	1600	N/A						
bis(2-Chloroethoxy)Methane	330	N/A						
2,4-Dichlorophenol	330	200,000						
1,2,4-Trichlorobenzene	330	2E+06						

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	BIP-S-8.5-10	BIP-S-13.5-15	BIP-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
	CRDL	Action Levels					
Semivolatle Compounds	ug/kg	ug/kg					
Naphthalene	330	N/A					
4-Chloroaniline	330	N/A					
Hexachlorobutadiene	330	90,000					
4-Chloro-3-methylphenol	330	N/A					
2-Methylnaphthalene	330	N/A					
Hexachlorocyclopentadiene	330	600,000					
2,4,6-Trichlorophenol	330	40,000					
2,4,5-Trichlorophenol	1600	8E+06					
2-Chloronaphthalene	330	N/A					
2-Nitroaniline	1600	N/A					
Dimethyl Phthalate	330	N/A					
Acenaphthylene	330	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
Semivolatile Compounds	CRDL ug/kg	Action Levels ug/kg					
2,6-Dinitrotoluene	330	1000					
3-Nitroaniline	1600	N/A					
Acenaphthene	330	N/A					
2,4-Dinitrophenol	1600	200,000					
4-Nitrophenol	1600	N/A					
Dibenzofuran	330	N/A					
2,4-Dinitrotoluene	330	N/A					
Diethylphthalate	330	6E+07					
4-Chlorophenyl-phenylether	330	N/A					
Fluorene	330	N/A					
4-Nitroaniline	1600	N/A					
4,6-Dinitro-2-methylphenol	1600	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B1P-S-0-2	B1P-S-8.5-10	B1P-S-18.5-20	B1P-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
	CRDL	Action Levels					
Semivolatile Compounds	ug/kg	ug/kg					
N-Nitrosodiphenylamine(1)	330	100,000					
4-Bromophenyl-phenylether	330	N/A					
Hexachlorobenzene	330	N/A					
Pentachlorophenol	1600	2E+06					
Anthracene	330	N/A					
Di-n-Butylphthalate	330	8E+06					
Butylbenzylphthalate	330	2E+07					
3,3'-Dichlorobenzidine	660	2000					
Benzo(a)anthracene	330	N/A					
Chrysene	330	N/A					
Di-n-octylphthalate	330	N/A					
Benzo(b)fluoranthene	330	N/A					

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

BACKGROUND INFORMATION
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30
Lab Sample Number		28909001	28909002	28909003	28909004	28922001	28922002	28922003
Matrix		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date		2/26/91	2/26/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91
Semivolatile Compounds	CRDL ug/kg	Action Levels ug/kg						
Benzo(b)fluoranthene	330	N/A						
Benzo(k)fluoranthene	330	N/A						
Benzo(a)pyrene	330	N/A						
Indeno(1,2,3-cd)Pyrene	330	N/A						
Dibenz(a,h)Anthracene	330	N/A						
benzo(g,h,i)perylene	330	N/A						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number	28909005	28909006	28909007	28909008
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91
Semivolatile Compounds	CRDL	Action Levels		
	ug/kg	ug/kg		
Fluoranthene	330	N/A		
Phenanthrene	330	N/A		
Pyrene	330	N/A		
bis(2-Ethylhexyl)-phthalate	330	50,000	2500 B	1400 B
Phenol	330	5E+07	970 B	3700 B
bis(2-Chloroethyl)Ether	330	600		
2-Chlorophenol	330	400,000		
1,3-Dichlorobenzene	330	N/A		
1,4-Dichlorobenzene	330	N/A		
Benzyl Alcohol	330	N/A		
1,2-Dichlorobenzene	330	N/A		
2-Methylphenol	330	N/A		

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number	28909005	28909006	28909007	28909008
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91
Semivolatile Compounds	CRDL	Action Levels		
bis(2-Chloroisopropyl)Ether	ug/kg	ug/kg		
4-Methylphenol	330	N/A		
N-Nitroso-di-n-propylamine	330	N/A		
Hexachloroethane	330	100		
Nitrobenzene	330	80,000		
Isophorone	330	40,000		
2-Nitrophenol	330	2E+06		
2,4-Dimethylphenol	330	N/A		
Benzoic Acid	1600	N/A		
bis(2-Chloroethoxy)Methane	330	N/A		
2,4-Dichlorophenol	330	200,000		
1,2,4-Trichlorobenzene	330	2E+06		

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number	28909005	28909006	28909007	28909008
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91
Semivolatile Compounds	CRDL ug/kg	Action Levels ug/kg		
Naphthalene	330	N/A		
4-Chloroaniline	330	N/A		
Hexachlorobutadiene	330	90,000		
4-Chloro-3-methylphenol	330	N/A		
2-Methylnaphthalene	330	N/A		
Hexachlorocyclopentadiene	330	600,000		
2,4,6-Trichlorophenol	330	40,000		
2,4,5-Trichlorophenol	1600	8E+06		
2-Chloronaphthalene	330	N/A		
2-Nitroaniline	1600	N/A		
Dimethyl Phthalate	330	N/A		
Acenaphthylene	330	N/A		

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number	28909005	28909006	28909007	28909008
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91
	CRDL	Action Levels		
	ug/kg	ug/kg		
Semivolatle Compounds	330	1000		
2,6-Dinitrotoluene	1600	N/A		
3-Nitroaniline	330	N/A		
Acenaphthene	1600	200,000		
2,4-Dinitrophenol	1600	N/A		
4-Nitrophenol	330	N/A		
Dibenzofuran	330	N/A		
2,4-Dinitrotoluene	330	6E+07		
Diethylphthalate	330	N/A		
4-Chlorophenyl-phenylether	330	N/A		
Fluorene	1600	N/A		
4-Nitroaniline	1600	N/A		
4,6-Dinitro-2-methylphenol				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number		28909005	28909006	28909007	28909008
Matrix		SOIL	SOIL	SOIL	SOIL
Sample Date	CRDL ug/kg	Action Levels ug/kg		2/26/91	2/26/91
N-Nitrosodiphenylamine(1)	330	100,000			
4-Bromophenyl-phenylether	330	N/A			
Hexachlorobenzene	330	N/A			
Pentachlorophenol	1600	2E+06			
Anthracene	330	N/A			
Di-n-Buthylphthalate	330	8E+06			
Butylbenzylphthalate	330	2E+07			
3,3'-Dichlorobenzidine	660	2000			
Benzo(a)anthracene	330	N/A			
Chrysene	330	N/A			
Di-n-octylphthalate	330	N/A			
Benzo(b)fluoranthene	330	N/A			

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- CRDL - Contract Required Detection Limit
- Action levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	B5P-S-0-2	B5P-S-8.5-10	B5P-S-23.0-25	B5P-S-23.0-25D
Lab Sample Number	28909005	28909006	28909007	28909008
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91	2/26/91
Semivolatile Compounds	CRDL ug/kg	Action Levels ug/kg		
Benzo(k)fluoranthene	330	N/A		
Benzo(a)pyrene	330	N/A		
Indeno(1,2,3-cd)Pyrene	330	N/A		
Dibenz(a,h)Anthracene	330	N/A		
benzo(g,h,i)perylene	330	N/A		

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

CRDL - Contract Required Detection Limit

Action levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	BIP-S-0-2	BIP-S-8.5-10	BIP-S-18.5-20	BIP-S-18.5-20D	B3P-S-8.5-10	B3P-S-13.5-15	B3P-S-28.5-30	B5P-S-0-2
Lab Sample Number	28909001	28909002	28909003	28909004	28922001	28922002	28922003	28909005
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/26/91	3/29/91	2/26/91	2/26/91	2/27/91	2/27/91	2/27/91	2/26/91
	MCL	CRDL	Action Levels					
	ug/L	mg/kg	mg/kg/ug/L					
Inorganics	6	16.2	30/10					
Antimony	50	2.7	80/50					
Arsenic	2,000	54	4000/1000					
Barium	5	1.4	40/10					
Cadmium	100	2.7	400/50					
Chromium	1,300	6.8	400/200					
Copper	15	0.8	N/A/50					
Lead	2	0.05	20/2.0					
Mercury	100	10.8	2000/700					
Nickel	50	1.4	N/A/10					
Selenium	N/A	2.7	200/50					
Silver	2	2.7	6/3					
Thallium	N/A	5.4	4000/2000					
Zinc								

Notes:

B - Value detected is less than the CRDL but greater than or equal to the MDL.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Blank Space - Value is below the Method Detection Limit(MDL).

CRDL expressed in mg/kg=(CRDL in ug/L * Digestion Factor(Assuming 200)

* Unit Conversion(1/1000)/%Solids(Assuming 75%)

N/A - Not Applicable

Action Levels proposed in Appendix A of 40CFR254.521(a)

(b) - Soluble Metals

(a) - Data reported in mg/kg (soil) and ug/L (water).

BACKGROUND INFORMATION
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		B5P-S-8.5-10		B5P-S-23.0-25		B5P-S-23.0-25D		BG-MW-6		BG-2P		BG-2P	
Lab Sample Number		28909006		28909007		28909008		18301002		18311002		18311003	
Matrix		SOIL		SOIL		SOIL		WATER		WATER		WATER (b)	
Sample Date		2/26/91		2/26/91		2/26/91		4/10/91		4/12/91		4/12/91	
		MCL ug/L	CRDL mg/kg	CRDL ug/L	Action Levels mg/kg/ug/L								
Inorganics		6	16.2	60	30/10	5.3 B	4.1 B	4.9 B					
Antimony		50	2.7	10	80/50	7.5	8.5	10.7					
Arsenic		2,000	54	200	4000/1000	123	44.4 B	42.6 B					
Barium		5	1.4	5	40/10	0.78 B	0.51 B	0.40 B					
Cadmium		100	2.7	10	400/50	36.6	24.2	14.4					
Chromium		1,300	6.8	25	400/200	13.7	16.4	17.4					
Copper		15	0.8	3	N/A/50	14.2	8.6	11.1					
Lead		2	0.05	0.2	20/2.0								
Mercury		100	10.8	40	2000/700	20.4	10.1 B	16.2					
Nickel		50	1.4	5	N/A/10		0.58 B	0.49 B					
Selenium		N/A	2.7	10	200/50	0.65 B	0.65 B	0.65 B					
Silver		2	2.7	10	6/3								
Thallium		N/A	5.4	20	4000/2000	36.2	34.6	53.0					
Zinc													

Notes:

B - Value detected is less than the CRDL but greater than or equal to the MDL.
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Blank Space - Value is below the Method Detection Limit(MDL).
CRDL expressed in mg/kg={CRDL in ug/L * Digestion Factor(Assuming 200)
* Unit Conversion(1/1000)}%Solids(Assuming 75%)

N/A - Not Applicable

(b) - Soluble Metals

(a) - Data reported in mg/kg (soil) and ug/L (water).

SITE 1, POL AREA
187th Fighter Group

Client Sample ID		P1BS-2-4	P1BS-8-10	P1BS-12-14	P2B-S-2-4	P2B-S-8-10	P2B-S-8-10D	P2B-S-12-14	P3B-S-2-4
Lab Sample Number		2899801 SOIL	2899802 SOIL	2899804 SOIL	28934004 SOIL	28934005 SOIL	28934006 SOIL	28934007 SOIL	28934008 SOIL
Matrix									
Sample Date		3/5/91	3/5/91	3/5/91	2/28/91	2/28/91	2/28/91	2/28/91	2/28/91
BTEX Compounds	CRDL ug/kg	Action ug/kg ug/L							
Benzene	5	N/A/N/A							
Ethylbenzene	5	8E+06/4000							
Toluene	5	2E+07/10,000							
Xylenes(total)	5	2E+08/70,000	7.9 J						

Notes:

J - Estimated (Exceeded holding time)
 MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
 CRDL - Contract Required Detection Limit
 Action levels proposed in Appendix A of 40CFR253.521(a)
 Blank Space - Value is below the Method Detection Limit(MDL).
 N/A - Not Applicable
 (a) - Data reported in ug/kg (soil) and ug/L (water).

**SITE 1, POL AREA
187th Fighter Group**

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	P3B-S-6-8	P3B-S-12-14	P4BS-2-4	P4BS-6-8	P4BS-12-14	P5B-S-4-6	P5B-S-12-14	P5B-S-8-10	P5BW1
Lab Sample Number	28934009	28934010	28998011	28998012	28998013	28934011	28934013	28934012	28972001
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Sample Date	2/28/91	2/28/91	3/5/91	3/5/91	3/5/91	2/28/91	2/28/91	2/28/91	3/4/91
BTEX Compounds	MCL	CRDL	CRDL	Action					
Benzene	5	5	5	ug/kg ug/L					
Ethylbenzene	700	5	5	N/A/N/A					400
Toluene	1,000	5	5	8E+06/4000	12	9.7		340	15
Xylenes(total)	10,000	5	5	2E+07/10,000					120
				2E+08/70,000	6.9	34		3000	1100
									260

Notes:

- J - Estimated (Exceeded holding time)
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Blank Space - Value is below the Method Detection Limit(MDL).
- Action levels proposed in Appendix A of 40CFR253.521(a)
- N/A - Not Applicable
- (a) - Data reported in ug/kg (soil) and ug/L (water).

SITE 1, POL AREA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				P6BS-6-8	P6BS-8-10	P6BS-12-14	P7BS-6-8	P7BS-8-10	P7BS-12-14	P7BW	P8BS-2-4	P8BS-6-8	P8BS-12-14
Lab Sample Number				28998005	28998006	28998007	28998008	28998009	28998010	29041002	28998014	28998015	28998016
Matrix				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Sample Date				3/5/91	3/5/91	3/5/91	3/5/91	3/5/91	3/5/91	3/7/91	3/5/91	3/5/91	3/5/91
BTEX Compounds	MCL ug/L	CRDL ug/kg	CRDL ug/L	Action ug/kg ug/L									
Benzene	5	5	5	N/A/N/A				4.0					
Ethylbenzene	700	5	5	8E+06/4000									
Toluene	1,000	5	5	2E+07/10,000									
Xylenes(total)	10,000	5	5	2E+08/70,000			15			9.3			

Notes:
J - Estimated (Exceeded holding time)
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Action levels proposed in Appendix A of 40CFR253.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg (soil) and ug/L (water).

BACKGROUND INFORMATION

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama^(a)

Client Sample ID	B1PS	B3PS	B5PS
Lab Sample Number	17937	17931	17937
Matrix	SOIL	SOIL	SOIL
Sample Date	2/26/91	2/26/91	2/26/91
Total Petroleum Hydrocarbons			
Sample Depth(Feet)			
0-2	4.8		10
8.5-10	3.9	5.4	4.8
13.5-15		572	
18.5-20	3.6		
23-25			4.2
28.5-30		28.4	

Notes:

Shaded areas indicate depth intervals not sampled.

(a) - Data reported in mg/kg.

DANNELLY ANG - Montgomery, Alabama^(a)

Client Sample ID				P1BS-2-4	P1BS-8-10	P1BS-8-10D	P1BS-12-14	P2B-S-2-4	P2B-S-8-10	P2B-S-8-10D
Lab Sample Number				28998001	28998002	28998003	28998004	28934004	28934005	28934006
Matrix				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date				3/5/91	3/5/91	3/5/91	3/5/91	2/28/91	2/28/91	2/28/91
PAH Compounds		CRDL	Action							
		ug/kg	Levels							
1-Methylnaphthalene		330	N/A							
2-Methylnaphthalene		330	N/A							
Naphthalene		330	N/A							
Acenaphthylene		330	N/A							
Acenaphthene		330	N/A							
Fluorene		330	N/A							
Phenanthrene		330	N/A							
Fluoranthene		330	N/A							
Pyrene		330	N/A							

Notes:

J - Estimated (Exceeded holding time)
CRDL - Contract Required Detection Limit
Action Levels are proposed in Appendix A of 40CFR252.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg (soil) and ug/L (water).

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			P1BS-2-4	P1BS-8-10	P1BS-8-10D	P1BS-12-14	P2B-S-2-4	P2B-S-8-10	P2B-S-8-10D
Lab Sample Number			28998001	28998002	28998003	28998004	28934004	28934005	28934006
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date			3/5/91	3/5/91	3/5/91	3/5/91	2/28/91	2/28/91	2/28/91
PAH Compounds	CRDL	Action							
Benzo(a)anthracene	ug/kg	Levels							
Chrysene	330	N/A							
Benzo(b)fluoranthene	330	N/A							
Benzo(k)fluoranthene	330	N/A							
Benzo(a)pyrene	330	N/A							
Indeno(1,2,3-cd)pyrene	330	N/A							
Dibenzo(a,h)anthracene	330	N/A							
Benzo(g,h,i)perylene	330	N/A							

(a) - Data reported in ug/kg (soil) and ug/L (water).

SITE 1, POL AREA
187th Fighter Group

[illegible]

J - Estimated (Exceeded holding time)

CRDL - Contract Required Detection Limit

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

Action Levels are proposed in Appendix A of 40CFR254.521(a)

(a) - Data reported in ug/kg (soil) and ug/L (water).

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

J - Estimated (Exceeded holding time)

CRDL - Contract Required Detection Limit

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

Action Levels are proposed in Appendix A of 40CFR254.521(a)

(a) - Data reported in ug/kg (soil) and ug/L (water).

SITE 1, POL AREA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama (a)

Client Sample ID					P5B-S-4-6	P3B-S-8-10	P5B-S-12-14	P5BW1	P6BS-6-8	P6BS-8-10	P6BS-12-14
Lab Sample Number					28934011	28934012	28934013	28972001	28998005	28998006	28998007
Matrix					SOIL	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Sample Date					2/28/91	2/28/91	2/28/91	3/4/91	3/5/91	3/5/91	3/5/91
	MCL	CRDL	CRDL	Action							
	ug/L	ug/kg	ug/L	Levels							
PAH Compounds	N/A	330	10	N/A				200			
1-Methylnaphthalene	N/A	330	10	N/A				250			
2-Methylnaphthalene	N/A	330	10	N/A				87			
Naphthalene	N/A	330	10	N/A							
Acenaphthylene	N/A	330	10	N/A							
Acenaphthene	N/A	330	10	N/A							
Fluorene	N/A	330	10	N/A							
Phenanthrene	N/A	330	10	N/A							
Fluoranthene	N/A	330	10	N/A							
Pyrene	N/A	330	10	N/A							

Notes:
J - Estimated (Exceeded holding time)
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
Action Levels are proposed in Appendix A of 40CFR254.521(a)
(a) - Data reported in ug/kg (soil) and ug/L (water).

DANNELLY ANG - Montgomery, Alabama (a)

Client Sample ID				P5B-S-4-6	P5B-S-8-10	P5B-S-12-14	P5BW1	P6BS-6-8	P6BS-8-10	P6BS-12-14
Lab Sample Number				28934011	28934012	28934013	28972001	28998005	28998006	28998007
Matrix				SOIL	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Sample Date				2/28/91	2/28/91	2/28/91	3/4/91	3/5/91	3/5/91	3/5/91
PAH Compounds	MCL ug/L	CRDL ug/kg	CRDL ug/L	Action Levels						
Benzo(a)anthracene	0.1	330	10	N/A						
Chrysene	0.2	330	10	N/A						
Benzo(b)fluoranthene	0.2	330	10	N/A						
Benzo(k)fluoranthene	0.2	330	10	N/A						
Benzo(a)pyrene	0.2	330	10	N/A						
Indeno(1,2,3-cd)pyrene	0.4	330	10	N/A						
Dibenzo(a,h)anthracene	0.3	330	10	N/A						
Benzo(g,h,i)perylene	N/A	330	10	N/A						

Notes:

J - Estimated (Exceeded holding time)

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

Action Levels are proposed in Appendix A of 40CFR254.521(a)

(a) - Data reported in ug/kg (soil) and ug/L (water).

SITE 1, POL AREA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID					P7BS-6-8	P7BS-8-10	P7BS-12-14	P7BW	P8BS-2-4	P8BS-6-8	P8BS-12-14
Lab Sample Number					28998008	28998009	28998010	29041002	28998014	28998015	28998016
Matrix					SOIL	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Sample Date					3/5/91	3/5/91	3/5/91	3/7/91	3/5/91	3/5/91	3/5/91
	MCL	CRDL	CRDL	Action							
	ug/L	ug/kg	ug/L	Levels							
PAH Compounds											
1-Methylnaphthalene	N/A	330	10	N/A				130			
2-Methylnaphthalene	N/A	330	10	N/A				7			
Naphthalene	N/A	330	10	N/A							
Acenaphthylene	N/A	330	10	N/A							
Acenaphthene	N/A	330	10	N/A							
Fluorene	N/A	330	10	N/A							
Phenanthrene	N/A	330	10	N/A							
Fluoranthene	N/A	330	10	N/A							
Pyrene	N/A	330	10	N/A							

Notes:

J - Estimated (Exceeded holding time)
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
Action Levels are proposed in Appendix A of 40CFR254.521(a)
(a) - Data reported in ug/kg (soil) and ug/L (water).

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				P7BS-6-8	P7BS-8-10	F7BS-12-14	F7BW	P8BS-2-4	P8BS-6-8	P8BS-12-14
Lab Sample Number				28998008	28998009	28998010	29041002	28998014	28998015	28998016
Matrix				SOIL	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Sample Date				3/5/91	3/5/91	3/5/91	3/7/91	3/5/91	3/5/91	3/5/91
PAH Compounds	MCL ug/L	CRDL ug/kg	CRDL ug/L	Action Levels						
Benzo(a)anthracene	0.1	330	10	N/A						
Chrysene	0.2	330	10	N/A						
Benzo(b)fluoranthene	0.2	330	10	N/A						
Benzo(k)fluoranthene	0.2	330	10	N/A						
Benzo(a)pyrene	0.2	330	10	N/A						
Indeno(1,2,3-cd)pyrene	0.4	330	10	N/A						
Dibenzo(a,h)anthracene	0.3	330	10	N/A						
Benzo(g,h,i)perylene	N/A	330	10	N/A						

Notes:

Y - Estimated (Exceeded holding time)

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

Action Levels are proposed in Appendix A of 40CFR254.521(a)

(a) - Data reported in ug/kg (soil) and ug/L (water).

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS-12-14 MS	03BS-12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16	04BS-14-16D
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003	29017004
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL								
ug/kg								
Action Levels								
1,1,2,2-Tetrachloroethane	5	40,000						
1,1-Dichloroethane	5	N/A						
1,1-Dichloroethene	5	N/A						
1,2-Dichloroethene(total)	5	8,000						
Acetone	10	8E+06			5000 BJ	13000 B	220 J	960
Benzene	5	N/A			1000 J		4800 B	1800 B
Carbon Disulfide	5	8E+06						
Ethylbenzene	5	8E+06			11000	1300 J		
Methylene Chloride	5	90,000			9500 B	7900 B		
Tetrachloroethene	5	N/A					400 J	1100

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL							
ug/kg							
Action							
Levels							
Toluene	5	2E+08					
Trichloroethene	5	N/A					
Vinyl Chloride	10	N/A					
Xylene(total)	5	2E+08					
Chloromethane	10	N/A					
Bromomethane	10	100,000					
Chloroethane	10	N/A					
Chloroform	5	100,000					
1,2-Dichloroethane	5	N/A					
2-Butanone	10	N/A					

Notes:

B - Applies to organic data only. Present in the corresponding method blank

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL							
ug/kg							
Action Levels							
1,1,1-Trichloroethane	5						
Carbon Tetrachloride	5						
Vinyl Acetate	10						
Bromodichloromethane	5						
1,2-Dichloropropane	5						
cis-1,3-Dichloropropene	5						
Dibromochloromethane	5						
1,1,2-Trichloroethane	5						
trans-1,3-Dichloropropene	5						
Bromoform	5						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

**SITE 2, OIL WATER SEPARATOR
187th Fighter Group**

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS-12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL							
ug/kg							
Volatiles Compounds							
4-Methyl-2-Pentanone							
2-Hexanone							
Chlorobenzene							
Styrene							

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
CRDL						
ug/kg						
Action Levels						
Volatile Compounds						
1,1,2,2-Tetrachloroethane	5	40,000				
1,1-Dichloroethane	5	N/A	790			
1,1-Dichloroethene	5	N/A				
1,2-Dichloroethene(total)	5	8,000	960		28000	
Acetone	10	8E+06	1800 B	5900	2000	
Benzene	5	N/A		390 J		
Carbon Disulfide	5	8E+06				
Ethylbenzene	5	8E+06		2300	220 J	
Methylene Chloride	5	90,000		3700 B	810 J	2600 B
Tetrachloroethene	5	N/A	1100			

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number		29017004	29017008	29017009	29017010
Matrix		SOIL	SOIL	SOIL	SOIL
Sample Date		3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action			
Volatiles Compounds	ug/kg	Levels			
Toluene	5	2E+08	5500	640 J	
Trichloroethene	5	N/A		4000	13000
Vinyl Chloride	10	N/A		1300 J	
Xylene(total)	5	2E+08	17000	1200	
Chloromethane	10	N/A			
Bromomethane	10	100,000			
Chloroethane	10	N/A			
Chloroform	5	100,000			
1,2-Dichloroethane	5	N/A			
2-Butanone	10	N/A			

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Volatle Compounds	ug/kg	Levels				
1,1,1-Trichloroethane	5	7E+06				
Carbon Tetrachloride	5	1,000				
Vinyl Acetate	10	N/A				
Bromodichloromethane	5	500				
1,2-Dichloropropane	5	N/A				
cis-1,3-Dichloropropene	5	20,000				
Dibromochloromethane	5	N/A				
1,1,2-Trichloroethane	5	100,000				
trans-1,3-Dichloropropene	5	20,000				
Bromoform	5	2E+06				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Volatile Compounds	ug/kg	Levels				
4-Methyl-2-Pentanone	10	N/A				
2-Hexanone	10	N/A				
Chlorobenzene	5	2E+06				
Styrene	5	2E+07				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
CRDL								
ug/kg								
Action Levels								
Volatiles Compounds								
1,1,2,2-Tetrachloroethane	5		1600					
1,1-Dichloroethane	5	1 J				24 J		
1,1-Dichloroethene	5							
1,2-Dichloroethene(total)	5	180	1500		150	1000	700	830
Acetone	10	19 B	1900 B		17 B	100 B	30 B J	1900
Benzene	5							
Carbon Disulfide	5					18 J		
Ethylbenzene	5							
Methylene Chloride	5	11 B	2000	13 B	21 B	120 B	51 B	1300 J
Tetrachloroethene	5		450 J					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number		29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date		3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
CRDL	Action								
ug/kg	Levels								
Volatle Compounds									
1,1,1-Trichloroethane	5								
Carbon Tetrachloride	5								
Vinyl Acetate	10								
Bromodichloromethane	5								
1,2-Dichloropropane	5								
cis-1,3-Dichloropropene	5								
Dibromochloromethane	5								
1,1,2-Trichloroethane	5								
trans-1,3-Dichloropropene	5								
Bromoform	5								

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
CRDL								
ug/kg								
Volatile Compounds								
4-Methyl-2-Pentanone								
2-Hexanone								
Chlorobenzene								
Styrene								

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatile Compounds	CRDL	ug/kg	Action	Levels (ug/kg)				
2-Methylnaphthalene	330		N/A					
Anthracene	330		N/A					
Benzo(a)anthracene	330		N/A		120 J			
Benzo(a)pyrene	330		N/A		770			
Benzo(b)fluoranthene	330		N/A		660			
Benzo(g,h,i)perylene	330		N/A		690			
Benzo(k)fluoranthene	330		N/A		440			
Benzoic Acid	1600		N/A		760			
Chrysene	330		N/A					
Di-n-butylphthalate	330		N/A		780			
			8E+06					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatile Compounds	CRDL ug/kg	Action Levels (ug/kg)						
Dibenz(a,h)anthracene	330	N/A			120 J			
Fluoranthene	330	N/A		140 J	1600			
Fluorene	330	N/A						
Indeno(1,2,3-cd)pyrene	330	N/A		56 J	400 J			
N-Nitrosodiphenylamine	330	100,000			43 J			
Naphthalene	330	N/A						
Nitrobenzene	330	40,000						
Phenanthrene	330	N/A			510			
Pyrene	330	N/A		110 J	1200			
Bis(2-Ethylhexyl)phthalate	330	50,000	1000 B	3000 B	2800 B	1900 B	440 B	3900 B

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatle Compounds	CRDL	Action	Levels (ug/kg)					
Phenol	330	5E+07						
bis(2-Chloroethyl)Ether	330	N/A						
2-Chlorophenol	330	400,000						
1,3-Dichlorobenzene	330	N/A						
1,4-Dichlorobenzene	330	N/A						
Benzyl Alcohol	330	N/A						
1,2-Dichlorobenzene	330	N/A						
2-Methylphenol	330	N/A						
bis(2-Chloroisopropyl)Ether	330	N/A						
4-Methylphenol	330	N/A						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatiles Compounds	CRDL ug/kg	Action Levels (ug/kg)						
N-Nitroso-di-n-propylamine	330	100						
Hexachloroethane	330	80,000						
Isophorone	330	2E+06						
2-Nitrophenol	330	N/A						
2,4-Dimethylphenol	330	N/A						
bis(2-Chloroethoxy)Methane	330	N/A						
2,4-Dichlorophenol	330	200,000						
1,2,4-Trichlorobenzene	330	2E+06						
4-Chloroaniline	330	N/A						
Hexachlorobutadiene	330	90,000						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number	29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatile Compounds	CRDL	Action Levels (ug/kg)						
4-Chloro-3-methylphenol	330	N/A						
Hexachlorocyclopentadiene	330	600,000						
2,4,6-Trichlorophenol	330	40,000						
2,4,5-Trichlorophenol	1600	8E+06						
2-Chloronaphthalene	330	N/A						
2-Nitroaniline	1600	N/A						
Dimethyl Phthalate	330	N/A						
Acenaphthylene	330	N/A						
2,6-Dinitrotoluene	330	1,000						
3-Nitroaniline	1600	N/A						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

DANNELLY ANG - Montgomery, Alabama ^(a)

[illegible]

Notes:

B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			01BS-0-2	01BS-10-12	01BS-14-16	02B-S-0-2	02B-S-12-14	02B-S-18-20	03BS-0-2	03BS-6-8
Lab Sample Number			29017005	29017006	29017007	28934001	28934002	28934003	29017011	29017012
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	2/28/91	2/28/91	2/28/91	3/6/91	3/6/91
Semivolatle Compounds	CRDL	Action								
ug/kg		Levels (ug/kg)								
Hexachlorobenzene	330	N/A								
Pentachlorophenol	1600	2E+06								
Butylbenzylphthalate	330	2E+07								
3,3'-Dichlorobenzidine	660	2,000								
Di-n-octylphthalate	330	N/A								

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14 29017013	03BS-12-14D 29017014	03BS12-14 MS 29017M14	03BS12-14 DUP 29017P14	04BS-0-2 29017001	04BS-6-8 29017002	04BS-14-16 29017003
Lab Sample Number	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Matrix	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
Sample Date							
Semivolatile Compounds	CRDL ug/kg	Action Levels (ug/kg)					
2-Methylnaphthalene	330	N/A			4100	43 J	170 J
Anthracene	330	N/A					
Benzo(a)anthracene	330	N/A					
Benzo(a)pyrene	330	N/A					
Benzo(b)fluoranthene	330	N/A					
Benzo(g,h,i)perylene	330	N/A					
Benzo(k)fluoranthene	330	N/A					
Benzoic Acid	1600	N/A					
Chrysene	330	N/A					
Di-n-butylphthalate	330	8E+06				50 J	48 J

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
Semivolatile Compounds	CRDL ug/kg	Action Levels (ug/kg)					
Dibenz(a,h)anthracene	330	N/A					
Fluoranthene	330	N/A					
Fluorene	330	N/A			100 J		
Indeno(1,2,3-cd)pyrene	330	N/A					
N-Nitrosodiphenylamine	330	100,000			94 J		
Naphthalene	330	N/A			8800 E	60 J	340 J
Nitrobenzene	330	40,000			270 J		
Phenanthrene	330	N/A			110 J		
Pyrene	330	N/A			44 J		
Bis(2-Ethylhexyl)phthalate	330	50,000			540 B	820 B	1500 B

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL							
ug/kg							
Semivolatile Compounds							
Phenol	330						
bis(2-Chloroethyl) Ether	330						
2-Chlorophenol	330						
1,3-Dichlorobenzene	330						
1,4-Dichlorobenzene	330						
Benzyl Alcohol	330						
1,2-Dichlorobenzene	330						
2-Methylphenol	330						
bis(2-Chloroisopropyl) Ether	330						
4-Methylphenol	330						

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg.

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama^(a)

Client Sample ID			03BS-12-14 29017013	03BS-12-14D 29017014	03BS12-14 MS 29017M14	03BS12-14 DUP 29017P14	04BS-0-2 29017001	04BS-6-8 29017002	04BS-14-16 29017003
Lab Sample Number			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Matrix			3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
Sample Date									
	CRDL ug/kg	Action Levels (ug/kg)							
Semivolatile Compounds									
4-Chloro-3-methylphenol	330	N/A							
Hexachlorocyclopentadiene	330	600,000							
2,4,6-Trichlorophenol	330	40,000							
2,4,5-Trichlorophenol	1600	8E+06							
2-Chloronaphthalene	330	N/A							
2-Nitroaniline	1600	N/A							
Dimethyl Phthalate	330	N/A							
Acenaphthylene	330	N/A							
2,6-Dinitrotoluene	330	1,000							
3-Nitroaniline	1600	N/A							

B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
Semivolatle Compounds	CRDL	Action					
Acenaphthene	ug/kg 330	Levels (ug/kg) N/A					
2,4-Dinitrophenol	1600	200,000					
4-Nitrophenol	1600	N/A					
Dibenzofuran	330	N/A					
2,4-Dinitrotoluene	330	N/A					
Diethylphthalate	330	6E+07					
4-Chlorophenyl-phenylether	330	N/A					
4-Nitroaniline	1600	N/A					
4,6-Dinitro-2-methylphenol	1600	N/A					
4-Bromophenyl-phenylether	330	N/A					

Notes:

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- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

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DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS12-14 MS	03BS12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
CRDL							
ug/kg							
Semivolatile Compounds	Action						
Hexachlorobenzene	Levels (ug/kg)						
	N/A						
Pentachlorophenol	2E+06						
Butylbenzylphthalate	2E+07						
3,3'-Dichlorobenzidine	2,000						
Di-n-octylphthalate	N/A						

B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

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DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Semivolatile Compounds	ug/kg	Levels (ug/kg)				
2-Methylnaphthalene	330	N/A	180 J	1200	69 J	
Anthracene	330	N/A				
Benzo(a)anthracene	330	N/A		52 J		
Benzo(a)pyrene	330	N/A		57 J		
Benzo(b)fluoranthene	330	N/A		83 J		
Benzo(g,h,i)perylene	330	N/A		50 J		
Benzo(k)fluoranthene	330	N/A		64 J		
Benzoic Acid	1600	N/A			780 J	
Chrysene	330	N/A		84 J		
Di-n-butylphthalate	330	8E+06				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Semivolatile Compounds	ug/kg	Levels (ug/kg)				
Dibenz(a,h)anthracene	330	N/A				
Fluoranthene	330	N/A			92 J	
Fluorene	330	N/A				
Indeno(1,2,3-cd)pyrene	330	N/A			57 J	
N-Nitrosodiphenylamine	330	100,000	57 J		82 J	
Naphthalene	330	N/A	420		1100	92 J
Nitrobenzene	330	40,000				
Phenanthrene	330	N/A			49 J	
Pyrene	330	N/A			67 J	
Bis(2-Ethylhexyl)phthalate	330	50,000	2300 B	1000 B	6100 B	2700 B

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Semivolatle Compounds	ug/kg	Levels (ug/kg)				
Phenol	330	5E+07				
bis(2-Chloroethyl)Ether	330	N/A				
2-Chlorophenol	330	400,000				
1,3-Dichlorobenzene	330	N/A				
1,4-Dichlorobenzene	330	N/A				
Benzyl Alcohol	330	N/A				
1,2-Dichlorobenzene	330	N/A				
2-Methylphenol	330	N/A				
bis(2-Chloroisopropyl)Ether	330	N/A				
4-Methylphenol	330	N/A				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

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DANNELLY ANG - Montgomery, Alabama (a)

Client Sample ID						
Lab Sample Number						
Matrix						
Sample Date						
Semivolatile Compounds	CRDL ug/kg	Action Levels (ug/kg)				
N-Nitroso-di-n-propylamine	330	100			05BS-8-10	05BS-12-14
Hexachloroethane	330	80,000			29017009	29017010
Isophorone	330	2E+06			SOIL	SOIL
2-Nitrophenol	330	N/A			3/6/91	3/6/91
2,4-Dimethylphenol	330	N/A				
bis(2-Chloroethoxy)Methane	330	N/A				
2,4-Dichlorophenol	330	200,000				
1,2,4-Trichlorobenzene	330	2E+06				
4-Chloroaniline	330	N/A				
Hexachlorobutadiene	330	90,000				

B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg.

**SITE 2, OIL WATER SEPARATOR
187th Fighter Group**

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
	CRDL	Action				
Semivolatle Compounds	ug/kg	Levels (ug/kg)				
4-Chloro-3-methylphenol	330	N/A				
Hexachlorocyclopentadiene	330	600,000				
2,4,6-Trichlorophenol	330	40,000				
2,4,5-Trichlorophenol	1600	8E+06				
2-Chloronaphthalene	330	N/A				
2-Nitroaniline	1600	N/A				
Dimethyl Phthalate	330	N/A				
Acenaphthylene	330	N/A				
2,6-Dinitrotoluene	330	1,000				
3-Nitroaniline	1600	N/A				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID			04BS-14-16D	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number			29017004	29017008	29017009	29017010
Matrix			SOIL	SOIL	SOIL	SOIL
Sample Date			3/6/91	3/6/91	3/6/91	3/6/91
Semivolatle Compounds	CRDL ug/kg	Action Levels (ug/kg)				
Acenaphthene	330	N/A				
2,4-Dinitrophenol	1600	200,000				
4-Nitrophenol	1600	N/A				
Dibenzofuran	330	N/A				
2,4-Dinitrotoluene	330	N/A				
Diethylphthalate	330	6E+07				
4-Chlorophenyl-phenylether	330	N/A				
4-Nitroaniline	1600	N/A				
4,6-Dinitro-2-methylphenol	1600	N/A				
4-Bromophenyl-phenylether	330	N/A				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/kg.

DANNELLY ANG - Montgomery, Alabama^(a)

Client Sample ID				04BS-14-16ID	05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number				29017004	29017008	29017009	29017010
Matrix				SOIL	SOIL	SOIL	SOIL
Sample Date				3/6/91	3/6/91	3/6/91	3/6/91
Semivolatiles Compounds			CRDL ug/kg				
Hexachlorobenzene			330				
Pentachlorophenol			1600				
Butylbenzylphthalate			330				
3,3'-Dichlorobenzidine			660				
Di-n-octylphthalate			330				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg.

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama^(a)

[illegible]

B - Value detected is less than the CRDL but greater than of equal to the MDL.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

CRDL expressed in mg/kg = (CRDL in ug/L * Digestion Factor (Assuming 200))

* Unit Conversion(1/1000)}/%Solids(Assuming 75%)

N/A - Not Applicable

N/C - No change in the RPD.

(c) - Relative Percent Difference(RPD) for duplicate samples.

(d) - Percent Recovery (%R) for Matrix Spike(MS) samples.

(a) - Data reported in mg/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	03BS-12-14	03BS-12-14D	03BS-12-14 MS	03BS-12-14 DUP	04BS-0-2	04BS-6-8	04BS-14-16	04BS-14-16D
Lab Sample Number	29017013	29017014	29017M14	29017P14	29017001	29017002	29017003	29017004
Matrix	SOIL	SOIL	SOIL (d)	SOIL (c)	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91	3/6/91
Inorganics	CRDL mg/kg	Action Levels (mg/kg)						
Antimony	16.2	30,000	4.1 B	3.1 B	62.4	59.7	5.2 B	
Arsenic	2.7	80,000		91.8	N/C			
Barium	54	4E+06	31.3 B	50.3 B	92.1	8.0	55.7	
Cadmium	1.4	40,000	0.65 B	0.48 B	81.0	38.7	0.45 B	
Chromium	2.7	400,000	19.2	17.8	171.4	35.4	16.8	
Copper	6.8	400,000	18.9	18.2	91.2	0.9	11.3	
Lead	0.8	N/A	8.8	6.3	106.7	3.3	5.2	
Mercury	0.05	20,000		114.3	N/C			
Nickel	10.8	200,000	16.3	14.6	88.9	12.7	15.4	
Selenium	1.4	N/A	0.97 B	3.0	41.9	23.7	0.40 B	
Silver	2.7	200,000		85.2	N/C			
Thallium	2.7	6,000		84.4	N/C			
Zinc	5.4	4E+06	39.6	49.0	92.6	11.3	48.0	

Notes:

B - Value detected is less than the CRDL but greater than of equal to the MDL.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

CRDL expressed in mg/kg = (CRDL in ug/L * Digestion Factor (Assuming 200)

* Unit Conversion(1/1000))/%Solids(Assuming 75%)

N/A - Not Applicable

N/C - No change in the RPD.

(c) - Relative Percent Difference(RPD) for duplicate samples.

(d) - Percent Recovery (%R) for Matrix Spike(MS) samples.

(a) - Data reported in mg/kg.

SITE 2, OIL WATER SEPARATOR

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID		05BS-0-2	05BS-8-10	05BS-12-14
Lab Sample Number		29017008	29017009	29017010
Matrix		SOIL	SOIL	SOIL
Sample Date		3/6/91	3/6/91	3/6/91
Inorganics	CRDL mg/kg	Action Levels (mg/kg)		
Antimony	16.2	30,000	2.8 B	
Arsenic	2.7	80,000	5.5	
Barium	54	4E+06	227	
Cadmium	1.4	40,000	0.47 B	
Chromium	2.7	400,000	14.9	
Copper	6.8	400,000	8.6	
Lead	0.8	N/A	5.5	
Mercury	0.05	20,000		
Nickel	10.8	200,000	14.2	
Selenium	1.4	N/A		
Silver	2.7	200,000		
Thallium	2.7	6,000		
Zinc	5.4	4E+06	35.4	

Notes:

B - Value detected is less than the CRDL but greater than of equal to the MDL.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

CRDL expressed in mg/kg = {CRDL in ug/L * Digestion Factor (Assuming 200)

* Unit Conversion(1/1000)}%Solids(Assuming 75%)

N/A - Not Applicable

N/C - No change in the RPD.

(c) - Relative Percent Difference(RPD) for duplicate samples.

(d) - Percent Recovery (%R) for Matrix Spike(MS) samples.

(a) - Data reported in mg/kg.

SITE 2, OIL WATER SEPARATOR
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama (a)

Client Sample ID	O1BS	O2BS	O3BS	O3BSDUP	O4BS	O4BSDUP	O4BS**	O4BSDUP**	O5BS
Lab Sample Number	17978	17946	17978	17978	17947	17947	17978	17978	17978
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	3/6/91	2/28/91	3/6/91	3/6/91	3/1/91	3/1/91	3/6/91	3/6/91	3/6/91
Total Petroleum Hydrocarbons									
Sample Depth (Feet)									
0-2	< 1.1	16	< 1.1		12.8		2120		5.5
6-8			< 1.1		95.1		69.1		
8-10									5.7
10-12	< 1.1								
12-14		< 1.1	< 1.1	< 1.1					12.1
14-16	< 1.1				378	113	< 1.1	6.6	
18-20		< 1.1							

Notes:

- ** - Indicated the boring was redrilled and sampled.
- Shaded areas indicate depth intervals not sampled.
- (a) - Data reported in mg/kg.

SITE 4 (APRON SPILL AREA)
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	CRDL ug/kg	Action Levels (ug/kg)	A1BS-0-2 29032004 SOIL 3/7/91	A1BS-8-10 29032005 SOIL 3/7/91	A1BS-16-18 29032006 SOIL 3/7/91	A1-SS-0-6 17894001 SOIL 2/21/91	A1-SS-6-24 17894002 SOIL 2/21/91	A2BS-4-6 29046001 SOIL 3/8/91	A2BS-12-14 29046002 SOIL 3/8/91	A2BS-12-14DUP 29046003 SOIL 3/8/91
PAH Compounds										
Anthracene	330	N/A								
Benzo(a)anthracene	330	N/A								
Benzo(a)pyrene	330	N/A								
Benzo(b)fluoranthene	330	N/A								
Benzo(g,h,i)perylene	330	N/A								
Benzo(k)fluoranthene	330	N/A								
Chrysene	330	N/A								
Dibenzo(a,h)anthracene	330	N/A								
Fluoranthene	330	N/A				37 JX				
Fluorene	330	N/A								
Indeno(1,2,3-cd)pyrene	330	N/A								
Phenanthrene	330	N/A								
Pyrene	330	N/A				38 JX				
Naphthalene	330	N/A								
2-Methylnaphthalene	330	N/A								
1-Methylnaphthalene	330	N/A								
Acenaphthylene	330	N/A								
Acenaphthene	330	N/A								

Notes:

JX - The compound was detected and quantitated below CRDL.
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/kg.

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

JX - The compound was detected and quantitated below CRDL.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

SITE 4 (APRON SPILL AREA)

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	A3-SS-0-6-DUP	A3-SS-6-24	A3-SS-6-24DUP	A4-SS-0-6	A4-SS-6-24	A5-SS-0-6	A5-SS-6-24	A6-SS-0-6
Lab Sample Number	17894006	17894007	17894008	17894009	17894010	17894011	17894012	17894013
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date	2/21/91	2/21/91	2/21/91	2/21/91	2/21/91	2/21/91	2/21/91	2/21/91
PAH Compounds	CRDL ug/kg	Action Levels (ug/kg)						
Anthracene	330	N/A				1000	920	
Benzo(a)anthracene	330	N/A	130	720	750	4100	3800	710
Benzo(a)pyrene	330	N/A	310	1200	1000	5000	4600	1400
Benzo(b)fluoranthene	330	N/A	330	1400	880	4100	3700	1500
Benzo(g,h,i)perylene	330	N/A	670	420	940	3400	3000	1200
Benzo(k)fluoranthene	330	N/A	170	700	490	2200	2000	810
Chrysene	330	N/A	250	1400	960	5300	4800	1600
Dibenzo(a,h)anthracene	330	N/A	80	200 JX	140 JX	530 JX	780	220 JX
Fluoranthene	330	N/A	260	2200	1600	9400	8400	2700
Fluorene	330	N/A					300 JX	
Indeno(1,2,3-cd)pyrene	330	N/A	570	1400	900	4100	3800	1300
Phenanthrene	330	N/A	79	830	840	3300	2900	910
Pyrene	330	N/A	230	1800	1400	7600	7100	2200
Naphthalene	330	N/A						
2-Methylnaphthalene	330	N/A						
1-Methylnaphthalene	330	N/A						
Acenaphthylene	330	N/A						
Acenaphthene	330	N/A						

Notes:

JX - The compound was detected and quantitated below CRDL.

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/kg.

SITE 4 (APRON SPILL AREA)

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				A6-SS-6-24	A7-SS-0-6	A7-SS-6-24	A8-SS-0-6	A8-SS-6-24
Lab Sample Number				17894014	17894015	17894016	17894017	17894018
Matrix				SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date				2/21/91	2/22/91	2/22/91	2/22/91	2/22/91
PAH Compounds	CRDL	ug/kg	Action Levels (ug/kg)					
Anthracene	330		N/A					
Benzo(a)anthracene	330		N/A	4200	330 JX	890		
Benzo(a)pyrene	330		N/A	4500	640	1100		
Benzo(b)fluoranthene	330		N/A	4700	470	820		
Benzo(g,h,i)perylene	330		N/A	3600	1000	860		
Benzo(k)fluoranthene	330		N/A	2500	250 JX	480		
Chrysene	330		N/A	5900	690	1100		
Dibenzo(a,h)anthracene	330		N/A	700				
Fluoranthene	330		N/A	10000	580	1200	43 JX	
Fluorene	330		N/A					
Indeno(1,2,3-cd)pyrene	330		N/A	4200	1600	910		
Phenanthrene	330		N/A	4000		230 JX		
Pyrene	330		N/A	8300	560	1200	59 JX	
Naphthalene	330		N/A					
2-Methylnaphthalene	330		N/A		*			
1-Methylnaphthalene	330		N/A					
Acenaphthylene	330		N/A					
Acenaphthene	330		N/A					

Notes:

JX - The compound was detected and quantitated below CRDL.
 CRDL - Contract Required Detection Limit
 Action Levels proposed in Appendix A of 40CFR254.521(a)
 Blank Space - Value is below the Method Detection Limit(MDL).
 N/A - Not Applicable
 (a) - Data reported in ug/kg.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRIP BLANK	TRV-02-2-28
Lab Sample Number	29032003	28973002	28998018	29046006	29017016	28909009	28891019	28934015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date						2/26/91		2/28/91
Sample Date	MCL	CRDL	Action					
Volatile Compounds	ug/L	ug/L	Levels (ug/L)					
trans-1,3-Dichloropropene	N/A	5	10					
4-Methyl-2-Pentanone	N/A	10	N/A					
2-Hexanone	N/A	10	N/A					
Tetrachloroethene	5	5	N/A					
1,1,2,2-Tetrachloroethane	N/A	5	2					
Toluene	1,000	5	10,000					
Chlorobenzene	N/A	5	700					
Ethyl Benzene	700	5	4,000					
Styrene	100	5	7,000					
Xylene (total)	10,000	5	7,000					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- Blank Space - Value is below the Method Detection Limit(MDL).
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001
Matrix	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91		3/4/91	3/7/91	3/7/91
	MCL	CRDL	Action			
Volatile Compounds	ug/L	ug/L	Levels (ug/L)			
Acetone	N/A	10	4,000		22 B	
Bromodichloromethane	100	5	0.03			14
Bromoform	100	5	700			4 J
Carbon Disulfide	N/A	5	4,000			
Chloroform	100	5	6			13
Dibromochloromethane	N/A	5	N/A			14
Methylene Chloride	N/A	5	5		6 B	4 BJ
Trichloroethene	5	5	N/A			
Chloromethane	N/A	10	N/A			
Bromomethane	N/A	10	50			
Vinyl Chloride	2	10	N/A			
Chloroethane	N/A	10	N/A			

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
 Indicate compound above or below linear range of instrument.
- Blank Space - Value is below the Method Detection Limit(MDL).
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91		3/4/91	3/7/91	3/7/91		
Semivolatile Compounds								
Di-n-butylphthalate								
N-Nitrosodiphenylamine(1)								
Naphthalene								
bis(2-Ethylhexyl)phthalate								
Phenol								
bis(2-Chloroethyl)Ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl Alcohol								

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
 Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91		3/4/91	3/7/91	3/7/91		
Semivolatile Compounds	MCL	CRDL	Action Levels (ug/L)					
1,2-Dichlorobenzene	600	10	N/A					
2-Methylphenol	N/A	10	N/A					
bis(2-Chloroisopropyl)Ether	N/A	10	N/A					
4-Methylphenol	N/A	10	N/A					
N-Nitroso-di-n-propylamine	N/A	10	0.005					
Hexachloroethane	N/A	10	20					
Nitrobenzene	N/A	10	20					
Isophorone	N/A	10	90					
2-Nitrophenol	N/A	10	N/A					
2,4-Dimethylphenol	N/A	50	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91	3/4/91	3/7/91	3/7/91	3/7/91		
Semivolatile Compounds	MCL	CRDL	Action Levels (ug/L)					
Benzoic Acid	N/A	10	N/A					
bis(2-Chloroethoxy)Methane	N/A	10	N/A					
2,4-Dichlorophenol	N/A	10	100					
1,2,4-Trichlorobenzene	70	10	700					
4-Chloroaniline	N/A	10	N/A					
Hexachlorobutadiene	N/A	10	4					
4-Chloro-3-methylphenol	N/A	10	N/A					
2-Methylnaphthalene	N/A	10	N/A					
Hexachlorocyclopentadiene	N/A	10	200					
2,4,6-Trichlorophenol	N/A	10	3					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	IERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91	3/4/91	3/7/91	3/7/91	3/7/91		
	MCL	CRDL	Action					
Semivolatile Compounds	ug/L	ug/L	Levels (ug/L)					
2,4,5-Trichlorophenol	N/A	50	4000					
2-Chloronaphthalene	N/A	10	N/A					
2-Nitroaniline	N/A	50	N/A					
Dimethyl Phthalate	N/A	10	N/A					
Acenaphthylene	N/A	10	N/A					
2,6-Dinitrotoluene	N/A	10	0.05					
3-Nitroaniline	N/A	50	N/A					
Acenaphthene	N/A	10	N/A					
2,4-Dinitrophenol	N/A	50	70					
4-Nitrophenol	N/A	50	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
 - Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91		3/4/91	3/7/91	3/7/91		
	MCL	CRDL	Action Levels (ug/L)					
Semivolatile Compounds	ug/L	ug/L						
Phenanthrene	N/A	10	N/A					
Anthracene	N/A	10	N/A					
Fluoranthene	N/A	10	N/A					
Pyrene	N/A	10	N/A					
Butylbenzylphthalate	N/A	10	7,000					
3,3'-Dichlorobenzidine	N/A	20	0.08					
Benzo(a)anthracene	0.1	10	N/A					
Chrysene	0.2	10	N/A					
Di-n-octylphthalate	N/A	10	N/A					
Benzo(b)fluoranthene	0.2	10	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- I - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID					ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number					29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix					WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date					3/7/91	3/8/91		3/4/91	3/7/91	3/7/91		
Semivolatile Compounds		MCL ug/L	CRDL ug/L	Action Levels (ug/L)								
Benzo(k)fluoranthene		0.2	10	N/A								
Benzo(a)pyrene		0.2	10	N/A								
Indeno(1,2,3-cd)Pyrene		0.4	10	N/A								
Dibenz(a,b)Anthracene		0.3	10	N/A								
benzo(g,h,i)perylene		N/A	10	N/A								

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/L.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRIP BLANK	TRV-02-2-28
Lab Sample Number	28998018	29046006	29017016	28909009	28891019	28934015	
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	
Sample Date				2/26/91		2/28/91	
Semivolatile Compounds	MCL ug/L	CRDL ug/L	Action Levels (ug/L)				
Di-n-butylphthalate	N/A	10	N/A				
N-Nitrosodiphenylamine(1)	N/A	10	N/A				
Naphthalene	N/A	10	N/A				
bis(2-Ethylhexyl)phthalate	N/A	10	3				
Phenol	N/A	10	20,000				
bis(2-Chloroethyl)Ether	N/A	10	0.03				
2-Chlorophenol	N/A	10	200				
1,3-Dichlorobenzene	600	10	N/A				
1,4-Dichlorobenzene	750	10	N/A				
Benzyl Alcohol	N/A	10	N/A				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLK2-26	TRIP BLANK	TRV-02-2-28
Lab Sample Number				28998018	29046006	29017016	28909009	28891019	28934015
Matrix				WATER	WATER	WATER	WATER	WATER	WATER
Sample Date							2/26/91		2/28/91
Semivolatle Compounds		MCL	CRDL	Action					
		ug/L	ug/L	Levels (ug/L)					
1,2-Dichlorobenzene		600	10	N/A					
2-Methylphenol		N/A	10	N/A					
bis(2-Chloroisopropyl)Ether		N/A	10	N/A					
4-Methylphenol		N/A	10	N/A					
N-Nitroso-di-n-propylamine		N/A	10	0.005					
Hexachloroethane		N/A	10	20					
Nitrobenzene		N/A	10	20					
Isophorone		N/A	10	90					
2-Nitrophenol		N/A	10	N/A					
2,4-Dimethylphenol		N/A	50	N/A					

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRIP BLANK	TRV-02-2-28
Lab Sample Number	28998018	29046006	29017016	28909009	28891019	28934015	
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	
Sample Date				2/26/91		2/28/91	
Semivolatile Compounds	MCL	CRDL	Action				
Benzoic Acid	ug/L	ug/L	Levels (ug/L)				
bis(2-Chloroethoxy)Methane	N/A	10	N/A				
2,4-Dichlorophenol	N/A	10	N/A				
1,2,4-Trichlorobenzene	70	10	100				
4-Chloroaniline	N/A	10	700				
Hexachlorobutadiene	N/A	10	N/A				
4-Chloro-3-methylphenol	N/A	10	4				
2-Methylnaphthalene	N/A	10	N/A				
Hexachlorocyclopentadiene	N/A	10	N/A				
2,4,6-Trichlorophenol	N/A	10	200				
	N/A	10	3				

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID						TRAVEL BLANK 28998018 WATER	TRAVEL BLANK 29046006 WATER	TRAVEL BLANK 29017016 WATER	TRAVELBLK2-26 28909009 WATER 2/26/91	TRIP BLANK 28891019 WATER	TRV-02-2-28 28934015 WATER
Lab Sample Number											
Matrix											
Sample Date											
Semivolatile Compounds	MCL ug/L	CRDL ug/L	Action Levels (ug/L)								
2,4,5-Trichlorophenol	N/A	50	4000								
2-Chloronaphthalene	N/A	10	N/A								
2-Nitroaniline	N/A	50	N/A								
Dimethyl Phthalate	N/A	10	N/A								
Acenaphthylene	N/A	10	N/A								
2,6-Dinitrotoluene	N/A	10	0.05								
3-Nitroaniline	N/A	50	N/A								
Acenaphthene	N/A	10	N/A								
2,4-Dinitrophenol	N/A	50	70								
4-Nitrophenol	N/A	50	N/A								

Notes:

B - Applies to organic data only. Present in the corresponding method blank.
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRIP BLANK	TRV-02-2-28
Lab Sample Number	28998018	29046006	29017016	28891019	28934015
Matrix	WATER	WATER	WATER	WATER	WATER
Sample Date			2/26/91		2/28/91
Semivolatile Compounds	MCL ug/L	CRDL ug/L	Action Levels (ug/L)		
Dibenzofuran	N/A	10	N/A		
2,4-Dinitrotoluene	N/A	10	N/A		
Diethylphthalate	N/A	10	30,000		
4-Chlorophenyl-phenylether	N/A	10	N/A		
Fluorene	N/A	50	N/A		
4-Nitroaniline	N/A	50	N/A		
4,6-Dinitro-2-methylphenol	N/A	50	N/A		
4-Bromophenyl-phenylether	N/A	10	N/A		
Hexachlorobenzene	1	10	N/A		
Pentachlorophenol	1	50	1000		

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLK2-26	TRIP BLANK	TRV-02-2-28
Lab Sample Number				28998018	29046006	29017016	28909009	28891019	28934015
Matrix				WATER	WATER	WATER	WATER	WATER	WATER
Sample Date							2/26/91		2/28/91
Semivolatile Compounds									
Phenanthrene		MCL ug/L	CRDL ug/L	Action Levels (ug/L)					
Anthracene		N/A	10	N/A					
Fluoranthene		N/A	10	N/A					
Pyrene		N/A	10	N/A					
Butylbenzylphthalate		N/A	10	7,000					
3,3'-Dichlorobenzidine		N/A	20	0.08					
Benzo(a)anthracene		0.1	10	N/A					
Chrysene		0.2	10	N/A					
Di-n-octylphthalate		N/A	10	N/A					
Benzo(b)fluoranthene		0.2	10	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

DANNELLY ANG - Montgomery, Alabama ^(a)

Notes:

B - Applies to organic data only. Present in the corresponding method blank.
J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
CRDL - Contract Required Detection Limit
Action Levels proposed in Appendix A of 40CFR254.521(a)
Blank Space - Value is below the Method Detection Limit(MDL).
N/A - Not Applicable
(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatile Compounds	MCL	CRDL	ug/L	Action	Levels (ug/L)			
Di-n-butylphthalate	N/A	10		N/A				
N-Nitrosodiphenylamine(1)	N/A	10		N/A	3 J			
Naphthalene	N/A	10		N/A				
bis(2-Ethylhexyl)phthalate	N/A	10		3	10			5 BJ
Phenol	N/A	10		20,000				
bis(2-Chloroethyl)Ether	N/A	10		0.03				
2-Chlorophenol	N/A	10		200				
1,3-Dichlorobenzene	600	10		N/A				
1,4-Dichlorobenzene	750	10		N/A				
Benzyl Alcohol	N/A	10		N/A				

Notes:

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/L.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatile Compounds								
1,2-Dichlorobenzene	MCL ug/L	CRDL ug/L	Action Levels (ug/L)					
2-Methylphenol	600	10	N/A					
bis(2-Chloroisopropyl)Ether	N/A	10	N/A					
4-Methylphenol	N/A	10	N/A					
N-Nitroso-di-n-propylamine	N/A	10	0.005					
Hexachloroethane	N/A	10	20					
Nitrobenzene	N/A	10	20					
Isophorone	N/A	10	90					
2-Nitrophenol	N/A	10	N/A					
2,4-Dimethylphenol	N/A	50	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
 - Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatile Compounds								
Benzoic Acid	MCL ug/L	CRDL ug/L	Action Levels (ug/L)					
bis(2-Chloroethoxy)Methane	N/A	10	N/A					
2,4-Dichlorophenol	N/A	10	100					
1,2,4-Trichlorobenzene	70	10	700					
4-Chloroaniline	N/A	10	N/A					
Hexachlorobutadiene	N/A	10	4					
4-Chloro-3-methylphenol	N/A	10	N/A					
2-Methylnaphthalene	N/A	10	N/A					
Hexachlorocyclopentadiene	N/A	10	200					
2,4,6-Trichlorophenol	N/A	10	3					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama (a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUF	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017PI5	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/5/91
Semivolatile Compounds	MCL	CRDL	Action					
2,4,5-Trichlorophenol	ug/L	ug/L	Levels (ug/L)					
	N/A	50	4000					
2-Chloronaphthalene	N/A	10	N/A					
2-Nitroaniline	N/A	50	N/A					
Dimethyl Phthalate	N/A	10	N/A					
Acenaphthylene	N/A	10	N/A					
2,6-Dinitrotoluene	N/A	10	0.05					
3-Nitroaniline	N/A	50	N/A					
Acenaphthene	N/A	10	N/A					
2,4-Dinitrophenol	N/A	50	70					
4-Nitrophenol	N/A	50	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA
187th Fighter Group
DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatile Compounds	MCL	CRDL	Action	Levels (ug/L)				
Dibenzofuran	N/A	10	N/A					
2,4-Dinitrotoluene	N/A	10	N/A					
Diethylphthalate	N/A	10	30,000					
4-Chlorophenyl-phenylether	N/A	10	N/A					
Fluorene	N/A	50	N/A					
4-Nitroaniline	N/A	50	N/A					
4,6-Dinitro-2-methylphenol	N/A	50	N/A					
4-Bromophenyl-phenylether	N/A	10	N/A					
Hexachlorobenzene	1	10	N/A					
Pentachlorophenol	1	50	1000					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
- Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatile Compounds	MCL ug/L	CRDL ug/L	Action Levels (ug/L)					
Phenanthrene	N/A	10	N/A					
Anthracene	N/A	10	N/A					
Fluoranthene	N/A	10	N/A					
Pyrene	N/A	10	N/A					
Butylbenzylphthalate	N/A	10	7,000					
3,3'-Dichlorobenzidine	N/A	20	0.08					
Benzo(a)anthracene	0.1	10	N/A					
Chrysene	0.2	10	N/A					
Di-n-octylphthalate	N/A	10	N/A					
Benzo(b)fluoranthene	0.2	10	N/A					

Notes:

- B - Applies to organic data only. Present in the corresponding method blank.
- J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.
- E - Applies to Gas Chromatography/Mass Spectroscopy data only.
 - Indicate compound above or below linear range of instrument.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/A - Not Applicable
- (a) - Data reported in ug/L.

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID				EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number				17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix				WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date					3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Semivolatiles Compounds	MCL ug/L	CRDL ug/L	Action Levels (ug/L)								
Benzofluoranthene	0.2	10	N/A								
Benzo(a)pyrene	0.2	10	N/A								
Indeno(1,2,3-cd)Pyrene	0.4	10	N/A								
Dibenz(a,h)Anthracene	0.3	10	N/A								
benzo(g,h,i)perylene	N/A	10	N/A								

B - Applies to organic data only. Present in the corresponding method blank.

B - Applies to organic data only. Present in the corresponding method blank.

J - Applies to organic data only. Value detected is greater than zero but less than the CRDL.

E - Applies to Gas Chromatography/Mass Spectroscopy data only.

Indicate compound above or below linear range of instrument.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/A - Not Applicable

(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	EQUIPMENT	ERB05-3-6 DUP	ERB05-3-6 MS	ERB-01-2-26	ERB-02-2-27	ERB-03-2-28	ERB-04-3-5	ERB-05-3-6
Lab Sample Number	17894020	29017P15	29017M15	28909010	28922004	28934014	28998017	29017015
Matrix	WATER	WATER (c)	WATER (d)	WATER	WATER	WATER	WATER	WATER
Sample Date		3/6/91	3/6/91	2/26/91	2/27/91	2/28/91	3/5/91	3/6/91
Inorganics								
Antimony				93.1				
Arsenic				99.9				
Barium				103.4	3.7 B			
Cadmium				86.8				
Chromium				100.6				
Copper				97.0	2.4 B	72.1		
Lead				92.0	21.9			
Mercury				109.0				
Nickel				98.6				
Selenium				89.6				
Silver				92.8				
Thallium				100.2				
Zinc				95.8	50.1			2.6 B
MCL	ug/L	CRDL	ug/L	Action	Level (ug/L)			
6	60			10				
50	10			50				
2,000	200			1000				
5	5			10				
100	10			50				
1,300	25			200				
15	3			50				
2	0.2			2				
100	40			700				
50	5			10				
N/A	10			50				
2	10			3				
N/A	20			2000				

Notes:

- B - Value detected is less than the CRDL but greater than or equal to the MDL.
- MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)
- CRDL - Contract Required Detection Limit
- Action Levels proposed in Appendix A of 40CFR254.521(a)
- Blank Space - Value is below the Method Detection Limit(MDL).
- N/C - No Change in the RPD
- (c) - Relative Percent Difference(RPD) for duplicate samples.
- (d) - Percent Recovery(%R) for Matrix Spike(MS) samples.
- (a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	ERB-06-3-7	ERB-07-3-8	ER-1	FB-01-3-4	FB-02-3-7	FB-03-3-7	TRAVEL BLANK	TRAVEL BLANK
Lab Sample Number	29041001	29046005	28891020	28973001	29032002	29032001	29032003	28973002
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date	3/7/91	3/8/91		3/4/91	3/7/91	3/7/91		
	MCL	CRDL	Action					
	ug/L	ug/L	Level (ug/L)					
Inorganics								
Antimony	6	60	10					
Arsenic	50	10	50					
Barium	2,000	200	1000		35.2 B			
Cadmium	5	5	10					
Chromium	100	10	50					
Copper	1,300	25	200		51.2	22.9 B		
Lead	15	3	50		1.5 B	2.1 B	1.3 B	
Mercury	2	0.2	2					
Nickel	100	40	700					
Selenium	50	5	10					
Silver	N/A	10	50					
Thallium	2	10	3					
Zinc	N/A	20	2000		4.2 B	3.1 B	3.0 B	

Notes:

B - Value detected is less than the CRDL but greater than or equal to the MDL.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/C - No Change in the RPD

(c) - Relative Percent Difference(RPD) for duplicate samples.

(d) - Percent Recovery(%R) for Matrix Spike(MS) samples.

(a) - Data reported in ug/L.

QC DATA

187th Fighter Group

DANNELLY ANG - Montgomery, Alabama ^(a)

Client Sample ID	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRAVEL BLANK	TRIP BLANK	TRV-02-2-28
Lab Sample Number	28998018	29046006	29017016	28909009	28891019	28934015
Matrix	WATER	WATER	WATER	WATER	WATER	WATER
Sample Date				2/26/91		2/28/91
	MCL ug/L	CRDL ug/L	Action Level (ug/L)			
Inorganics						
Antimony	6	60	10			
Arsenic	50	10	50			
Barium	2,000	200	1000			
Cadmium	5	5	10			
Chromium	100	10	50			
Copper	1,300	25	200			
Lead	15	3	50			
Mercury	2	0.2	2			
Nickel	100	40	700			
Selenium	50	5	10			
Silver	N/A	10	50			
Thallium	2	10	3			
Zinc	N/A	20	2000			

Notes:

B - Value detected is less than the CRDL but greater than or equal to the MDL.

MCL - Maximum Contaminant Level (U.S. Drinking Water Standards)

CRDL - Contract Required Detection Limit

Action Levels proposed in Appendix A of 40CFR254.521(a)

Blank Space - Value is below the Method Detection Limit(MDL).

N/C - No Change in the RPD

(c) - Relative Percent Difference(RPD) for duplicate samples.

(d) - Percent Recovery(%R) for Matrix Spike(MS) samples.

(a) - Data reported in ug/L.

Appendix D
SOIL BORING LOGS

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
B1PS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION Background
ELEVATION 206.2' (Gr.), 206.04' (TOC) DRILLING CONTRACTOR Kilman Bros./Stone Mt., GA
DRILLING METHOD AND EQUIPMENT 3 1/4" ID HSA, CME 75
WATER LEVELS _____ START 2/26/91 (1020) FINISH 2/26/91 (1120hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6" (N)		
5	1.5	1S	0.8	5-5-7-7 (12)	<u>Fat Clay</u> (CH) - Reddish brown-orange, moist, stiff, upper 0.2'	Chem. Analysis (1S)
	5.0	2S	1.5	5-6-6 (12)	<u>Silty Clay</u> (CL-ML) Mottled brown-orange w/tan, moist, stiff	
10	10	3S	1.5	8-11-14 (25)	<u>Silty Clay</u> (CL-ML) Mottled brown-tan, moist, v. stiff	Chem. Analysis (3S)
	15	4S	1.5	6-7-15 (22)	<u>Silty Clay</u> (CL-ML) Similar to 3S, lower 0.5' is <u>Chalk</u> - Lt. grey to Lt. brown, silty	
20	20	5S	1.5	22-45-50/4 (95)	<u>Chalk</u> - Olive green to brown with grey, moist, hard, micaceous, silty	Chem. Analysis (5S) Dup. Sample on BTEX Dup. Sample on TPH
					Boring Terminated @ 20' BGS Installed 5' 1.25" pvc screen and 15' 1.25" pvc casing. Added 7' graded sandpack, 2' bentonite seal, and grouted annulus to surface (0'-11'). Flush-grade piezometer completed with steel cover and locking cap.	Boring terminated @ 1120 hrs.



PROJECT NUMBER
MGM27526.SI.FK

BORING NUMBER
B2PS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION Background
ELEVATION 206.4'(Gr), 206.23'(TOC) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT 3 1/4" ID HSA, CME 75
WATER LEVELS _____ START 2/26/91 (1255hrs) FINISH 2/26/91 (1310hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6'-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
5	5	1S	1.5	6-8-9 (17)	<u>Silty Clay (CL-ML)</u> -Brown-tan mottled, moist, v. stiff	Boring B2PS is nexted with B1PS, therefore soil was analyzed in B1PS.
10	10	2S	1.5	9-15-19 (30)	<u>Silty-Clay (CL-ML)</u> -Similar to 1S	
					Boring terminated @ 10' bgs Installed 5 ft of 1.25" pvc screens and 5 ft of 1.25" pvc casing. Added 7' graded sandpack, 2' bentonite seal, and grouted remaining annulus to surface (0'-1'). Flush-grade piezometer completed with steel cover and locking cap.	Boring terminated @ 1310 hrs

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
B3PS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION Background
ELEVATION 208.5' (Gr.), 208.31 (TOC) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75
WATER LEVELS 2-27-91 START (1330 hrs) FINISH (1440 hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
				6"-6"-6" (N)		
2	2	1S	0.5	14-6-4 (10)	Asphalt/Sand with Gravel - Road and fill material	Asphalt noted in sample-Not submitted for analysis
5	5	2S	0.8	3-4-5 (9)	Poorly Graded Sand w/Gravel (Fill matl.) Brown-black, dry, loose, gravel approx. 4mm.	Sample not submitted for analysis due to possible asphalt content in fill material
10	10	3S	1.5	5-6-10 (16)	Silty Clay (CL-ML) - Lt. Brown-lt. grey, moist, v. stiff, micaceous, slightly chalky (area the red), contains calcareous gravel in thin lenses	Chemical analysis (3S)
15	15	4S	1.5	10-19-17 (36)	Silty Clay (CL-ML) Similar to 3S hard	Chemical analysis (4S)
20	20	5S	1.5	11-12-15 (27)	Silty Clay (CL-ML) Similar to 3S except lower 0.2' contains chalk, greenish-grey, micaceous	Boring terminated @ 30' BGS Installed 10' of 1.25" pvc screen and 20' of 1.25" pvc casing. Added 12.5' sandpack, 2' bentonite seal, and grouted annulus to surface (0'-15.5').
						Flush grade piezometer completed with steel cover and locking cap.
25	25	6S	1.5	10-10-16 (26)	Silty Clay (CL-ML) Mottled tan-lt. grey, moist, v. stiff, lower 0.5' is greenish-grey Chalk	
				16-30-50/4 (80)	Chalk - Olive-green to grey, moist hard, calcareous gravel 2-4mm	Chemical Analysis (7S)
30	7S	1.5				

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
B5PS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION Background
ELEVATION 198.3'(Gr), 198.05' TOC DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT 3 1/2" ID HSA, CME 75
WATER LEVELS 2-26-91 (1505) START 2-26-91 (1650) FINISH 2-26-91 (1650) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
5	2	1S	0.9	5-6-65 (12)	<u>Silty Clay (CL-ML)</u> Reddish brown, moist, stiff.	Chem. Analysis (1S)
	5	2S	1.5	5-3-4 (7)	<u>Silty Clay with Sand (CL-ML)</u> Mottled reddish brown-tan, moist, firm	
10						Chem. Analysis (3S)
	10	3S	1.2	3-4-6 (10)	<u>Fat Clay with Sand (CH)</u> Mottled reddish brown, moist, stiff	
15	15	4S	1.5	3-4-4 (8)	<u>Fat Clay with Sand (CH)</u> Similar to 3S - lower 0.5' becomes Chalky, lt. grey-lt. brown, ferruginous, micaceous	
	20	5S	1.5	6-19-19 (38)	<u>Silty Clay (CL-ML)</u> Mottled lt. brown-lt. grey, moist, hard, chalky, micaceous	
25						Chem. Analysis (6S) Boring terminated at 30' bgs Installed 5' of 1.25" pvc screen and 25' of 1.25" pvc casing. Added 7' graded sandpack, 2' bentonite seal, and grouted annulus to surface (0-21'). Flush-grade piezometer completed with steel cover and locking cap.
	25	6S	1.2	12-19-30 (49)	<u>Silty Clay (CL-ML)</u> Lt. brown-lt. grey, mottled, moist, hard, chalky, lower 0.2' is <u>Chalk</u> - olive-green to grey, moist, hard	
	30	7S	1.5	12-21-50 (71)	<u>Chalk</u> - Olive green-grey, moist, hard, micaceous	

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
B6MW (Monitoring Well) SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION Background
ELEVATION 198.4'(Gr.), 198.23'(TOC) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT 3 1/2" ID HSA, CME 75
WATER LEVELS _____ START 2-27-91 (1005) FINISH 2-27-91 (1040) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
5	5	1S	1.5	5-6-8 (14)	Silty Clay (CL-ML)-Brown-tan w/dark organic silt, moist, stiff	Boring B6MW is nested with B5PS, therefore soil was analyzed only in B5PS.
10	10	2S	1.5	3-4-5 (9)	Fat Clay with Sand (CH)- Mottled orange-brown to tan, moist, stiff, slightly chalky	
15	15	3S	1.5	7-8-12 (20)	Silty Clay (CL-ML)-Brown w/lt. grey chalky laminae, moist v. stiff	
20	20	4S	1.5	13-33-50/5 (83)	Chalk - Greenish-grey, moist, hard, silty, micaceous	Boring terminated @ 1040 hrs.
					Boring terminated @ 20' bgs Installed 10' of 2" pvc screen and 10' of 2" pvc casing. Added 12.5' graded sandpack, 2' bentonite seal, and grouted annulus to surface (0'-5.5'). Flush-grade monitoring well completed with steel cover, locking cap, and brass ID plate.	

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
PIBS

SHEET 1

OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION POL (Site 1)
ELEVATION 202.6' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75
WATER LEVELS _____ START 3-5-91 FINISH 3-5-91 LOGGER B. Carlisle
~~(0800 hrs)~~ ~~(0855 hrs)~~

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
2		1S	--	Not Sampled	Not Sampled-Limestone backfill	HNU headspace @ borehole = 120ppm
4		2S	0.9	6-6-8 (14)	<u>Silty Clay</u> (CL-ML)-Mottled lt. grey-tan, moist, stiff, micaceous, slightly chalky	Chem. Analysis (2S)
6		3S	1.2	5-6-9 (15)	<u>Silty Clay</u> (CL-ML)-Similar to 2S	Borehole headspace w/HNU = 10-15ppm
8		4S	1.5	7-10-15 (25)	<u>Silty Clay</u> (CL-ML)-Similar to 2S except very stiff, less than 5% calcareous gravel, clay is ferruginous	
10		5S	1.5	9-15-12 (27)	<u>Silty Clay</u> (CL-ML)-Tan with light grey, moist, v. stiff, silty	Chem. Analysis (5S) TPH & BTEX Dup taken
12		6S	1.5	7-12-15 (27)	<u>Silty Clay</u> (CL-ML)-Similar to 5S	
14		7S	1.5	16-16-22 (38)	<u>Silty Clay</u> (CL-ML)-Similar to 5S Lower 0.5' is <u>Chalk</u> -Greenish-grey-olive, moist, hard, silty	Chem. Analysis (7S)
					Boring terminated @ 14' bgs- Annulus grouted to surface	
						<u>Soil HNU Headspace (ppm)</u> 3S = 220ppm 4S = 130ppm 6S = 1ppm 7S = 5ppm

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P2BS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION POL (Site 1)
ELEVATION 201.8' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/4" ID, CME 75
WATER LEVELS 2-28-91 START (1140) 2-28-91 FINISH (1230) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
2		1S	--	Not Sampled	Not Sampled - Limestone backfill	
4		2S	1.2	5-7-8 (15)	<u>Silty Clay (ML-CL)</u> - Mottled tan to greenish-grey, moist, stiff	Chem. Analysis (2S)
6		3S	1.5	4-3-4 (7)	<u>Silty Clay (ML-CL)</u> - Similar to 2S except firm	
8		4S	1.5	14-14-14 (28)	<u>Silty Clay (ML-CL)</u> - Mottled tan-lt. grey, moist, v. stiff	
10		5S	1.5	8-14-14 (28)	<u>Silty Clay (ML-CL)</u> - Similar to 4S	Chem. Analysis (5S)
12		6S	1.5	4-4-9 (13)	<u>Silty Clay (ML-CL)</u> - Similar to 4S except stiff	
14		7S	1.5	9-12-16 (38)	<u>Silty Clay (ML-CL)</u> - Similar to 4S except hard, lower 0.5' is <u>Chalk</u> - greenish-grey, moist	Chem. Analysis (7S)
					Boring terminated at 14 ft. bgs-annulus grouted to surface	
						<u>Soil HNU Headspace (ppm)</u> 2S = 250 3S = 160 4S = 140 6S = 10

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P3BS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION POL (Site 1)

ELEVATION 201.2' (Gr.)

DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT HSA, 3 1/4" ID CME 75

WATER LEVELS START 2-28-91 (1450) FINISH 2-28-91 (1545) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	--	Not Sampled	Not sampled-Limestone backfill	
4		2S	1.2	4-5-6 (11)	<u>Silty Clay</u> (ML-CL)-Mottled greenish-brown to lt. grey, moist, stiff, contains white chalky silt	Chem. Analysis (2S)
6		3S	--	--	<u>Silty Clay</u> (ML-CL) - Similar to 2S	3S sampled with hand auger to check for utility obstruction
8		4S	1.5	14-13-17 (30)	<u>Silty Clay</u> (ML-CL)-Similar to 2S except hard	Chem. Analysis (4S)
10		5S	1.5	5-6-8 (14)	<u>Silty Clay</u> (ML-CL)- Greenish-brown to tan, moist, stiff	
12		6S	1.5	4-5-8 (13)	<u>Silty Clay</u> (ML-CL)- Greenish brown-tan with lt. grey, moist, stiff	
14		7S	1.0	21-40-50/2 (90)	<u>Chalk</u> - Greenish grey-olive, moist hard, silty	Chem. Analysis (7S)
					Boring terminated @ 14' bgs-Annulus grouted to surface	
						<u>Soil HNU Headspace (ppm)</u> 4S = 9 5S = 3 6S = 30 7S = 11

PROJECT NUMBER
MGM27526.SI.FK.BORING NUMBER
P4BS

SHEET

1

OF

1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION POL (Site 1)

ELEVATION 202.2' (Gr.)

DRILLING CONTRACTOR

Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75

WATER LEVELS START 3-5-91 (1225 hrs) FINISH 3-5-91 (1300 hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	--	Not Sampled	Not Sampled-Limestone backfill	
4		2S	1.0	4-10-12 (22)	Silty Clay (CL-ML)-Mottled tan-lt. grey, moist, v. stiff, chalky	Cham. Analysis (2S)
6		3S	1.5	3-3-3 (6)	Silty Clay (CL-ML)-Tan to brown w/lt. grey calcareous silt, moist, firm	
8		4S	1.2	6-8-12 (20)	Silty Clay (CL-ML)-Similar to 3S except v. stiff	Chem. Analysis (4S)
10		5S	1.5	4-4-6 (10)	Silty Clay (CL-ML)-Similar to 3S except stiff	
12		6S	1.5	5-5-8 (13)	Silty Clay (CL-ML)-Similar to 3S except stiff, contain slight amount roots	
14		7S	1.5	8-15-37 (52)	Silty Clay (CL-ML)-Similar to 3S-Lower 1.0' is Chalk-Greenish-grey to olive, moist, hard, silty	Chem. Analysis (7S)
					Boring terminated @ 14' bgs-Annulus grouted to surface	
						Soil HNU Headspace (ppm) 3S = 130 5S = 55 6S = 60

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P5BS

SHEET 1

OF1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION POL (Site 1)
ELEVATION 201.6' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75
WATER LEVELS _____ START 2-28-91 FINISH 2-28-91 LOGGER B. Carlisle
(1645) (1740-hrs)

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	--	Not Sampled	Not sampled-Limestone backfill	Soil descriptions above the Chalk (7S) are of POL backfill material
4		2S	NR	--	No recovery	
6		3S	0.9	1-1-2 (3)	Well Graded Sand with Gravel (SW) (Backfill material) tan-brown, wet, very loose	Chem. Analysis (3S)
8		4S	1.2	2-1-1 (2)	Well Graded Sand with Gravel and Clay (SW-SC) - Similar to 3S except less than 15% Clay	Backfill grain size analysis
10		5S	1.2	2-2-2 (4)	Well Graded Sand with Gravel and Clay (SW-SC) - Similar to 4S	Chem. Analysis (5S)
12		6S	1.5	2-2-8 (10)	Well Graded Sand with Gravel and Clay (SW-SC) - Similar to 4S except lower 0.2' is greenish-grey Chalk	
14		7S	1.5	8-25-30 (55)	Chalk - olive-green to lt. grey, moist hard, silty	Chem. Analysis (7S)
					Boring terminated @ 14' bgs- Installed 10' of 2" pvc screen to temporarily keep the annulus open. After obtaining a water sample the screen was pulled and the remaining annulus was grouted to surface.	Could not collect Shelby tube at 7S due to refusal (hardness) *Soil HNU Headspace (ppm) 6S = 60 Split spoon would not retain enough sample to perform headspace analysis in the saturated backfill.

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P6BS

SHEET 1

OF 1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION POL (Site 1)

ELEVATION 202.1' (Gr.)

DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT HSA, 3 1/4" ID, CME 75

WATER LEVELS START 3-5-91 (1005-hrs) FINISH 3-5-91 (1115-hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
				Not	Asphalt Pavement and backfill	
2		1S	--	Sampled		
4		2S	1.5	5-5-8 (13)	Silty Clay (CL-ML)-Mottled lt. grey-tan, moist, stiff, silty	
6		3S	0.8	5-7-9 (16)	Silty Clay (CL-ML)-Similar to above except v. stiff, sample contained asphalt cavings from road	Intended to collect sample (3S) for analysis but the tubes contained asphalt which was carry-down from the road above.
8		4S	1.0	6-8-10 (18)	Silty Clay (CL-ML)-Similar to 2S except v. stiff	Sample Analysis (4S) TPH sample may contain asphalt.
10		5S	1.2	11-14-13 (27)	Silty Clay (CL-ML)-Similar to 2S except v. stiff	Sample Analysis (5S)
12		6S	1.5	12-10-15 (25)	Silty Clay (CL-ML)-Similar to 2S except v. stiff	
14		7S	1.2	7-11-14 (25)	Silty Clay (CL-ML)-Similar to 2S except v. stiff-Lower 0.3' is Chalk-Greenish-grey-olive, silty	Sample Analysis (7S)
					Boring terminated @ 14 ft. bgs-Annulus grouted to surface	
						Soil HNU Headspace (ppm)
						1S = 5
						2S = 3
						5S = 3
						6S = 1

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P7BS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION POL (Site 1)

ELEVATION 202.4' (Gr.)

DRILLING CONTRACTOR

Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75

WATER LEVELS

START 3-5-91 (1405 hrs) FINISH 3-5-91 (1445 hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	--	Not Sampled	Not Sampled-Limestone	Soil descriptions above Sample 6S are of the POL backfill material
4		2S	0.2	1-1-0 (1)	Well Graded Sand with Gravel (SW) (Backfill)-wet, loose	Could not perform sample analysis due to low recovery
6		3S	0.2	1-1-1 (2)	Well Graded Sand with Gravel (SW) (Backfill)-wet, loose	Could not perform sample analysis due to low recovery
8		4S	0.7	2-1-1 (2)	Well Graded Sand with Gravel and Clay (SW-SC)-(Backfill)-wet, loose	Sample Analysis (4S)
10		5S	0.8	2-1-1 (2)	Well Graded Sand with Gravel and Clay (SW-SC)-(Backfill)-wet, loose	Sample Analysis (5S)
12		6S	0.8	6-12-50/4 (72)	Well Graded Sand with Gravel and Clay (SW-SC)-(Backfill)-wet, loose	Sample Analysis (6S)
					Boring terminated @ 12' bgs- Hit refusal-Driller believes the auger has encountered a concrete slab that anchors the USTs.	Could not collect Shelby Tube beneath backfill due to refusal on potential concrete slab.
					Boring terminated at 12 ft. bgs- Installed 10 ft. of 2" pvc screen to temporarily keep the annulus open. After obtaining a water sample the screen was pulled and the remaining annulus was grouted to surface.	Split spoon would not retain enough sample to perform HNU headspace.

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
P8BS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION POL (Site 1)
ELEVATION 201.0' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75 3-5-91 3-5-91
WATER LEVELS START (1500 hrs) FINISH (1635 hrs) LOGGER B. Carlisle

WATER LEVELS						
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
				6"-6"-6" (N)		
				Not Sampled	Not Sampled-Limestone backfill	
2		1S	--	4-7-8	<u>Sandy Fat Clay</u> (CH)-Mottled brown-red, moist, stiff, lower 1.0' is <u>Silty Clay</u> (CL-ML)-tan-grey, moist, stiff, chalky	Sample Analysis (2S)
4		2S	1.5	(15)		
6		3S	1.2	5-7-9	<u>Silty Clay</u> (CL-ML)-Similar to the lower 1.0' in 2S	Sample Analysis (4S)
8		4S	1.0	(16)		
10		5S	1.5	7-8-9	<u>Silty Clay</u> -tan, moist, very stiff, silty	Sample Analysis (6S)
12		6S	2.0	(17)		
14		7S	1.0	4-7-8	<u>Silty Clay</u> -tan -lt. grey, moist, stiff, silty, micaceous	SHELBY TUBE SAMPLE (6S)
				(15)		
				Shelby Tube	<u>Silty Clay</u> (CL-ML)-Similar to 5S as noted from open ends of Shelby Tube	Sample Analysis (7S)
				12-22-34		
				(56)	<u>Silty</u> (CL-ML)-Similar to 5S- Lower 0.3' is <u>Chalk</u> Greenish-grey-olive, moist, hard, silty	Soil HNU Headspace (ppm)
					Boring terminated @ 14' bgs- Annulus grouted to surface	3S = 1 ppm 4S = 1 ppm 5S = 0 ppm

PROJECT NUMBER
MGM27526.SI.FK

BORING NUMBER

01BS

SHEET 1

OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION OWS (Site 2)
ELEVATION 198.9' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/4" ID, CME 75
WATER LEVELS 3-6-91 START (1000-hrs) FINISH 3-6-91 (1045-hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)		
2		1S	0.8	3-3-3 (6)	<u>Sandy Silty Clay (CL-ML)</u> -Brown, moist loose, topsoil composition, organic, material with roots	Chem. Analysis (1S)
4		2S	1.5	2-2-2 (4)	<u>Silty Clay with Sand (CL-ML)</u> -Brown-tan with lt. grey silt, moist, soft	
6		3S	1.2	2-6-8 (14)	<u>Silty Clay (CL-ML)</u> -Mottled tan-lt. grey, moist, stiff, contains less than 5% calcareous sand	
8		4S	1.5	2-4-5 (9)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except mottled brown to red with lt. grey silt	
10		5S	1.5	4-5-7 (12)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except contains roots, clay becomes chalky	
12		6S	1.2	5-5-5 (10)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except slightly sandy (less than 10%)	Chem. Analysis (6S)
14		7S	1.5	8-11-10 (21)	<u>Silty Clay with Sand (CL-ML)</u> -Greenish-grey to brown, moist, glauconitic, sand less than 10%	Solvent odor noted in sample
16		8S	1.5	6-11-27 (38)	<u>Silty Clay (CL-ML)</u> -Similar to 7S except hard - Lower 0.5' is <u>Chalk</u> -Greenish-grey to olive, moist, hard, silty	Chem. Analysis (8S)
					Boring terminated @ 16' bgs-Annulus grouted to surface	
						<u>Soil HNU Headspace (ppm)</u> 2S = 1 ppm 5S = 40 ppm 7S = 40 ppm



PROJECT NUMBER

MGM27526.SI

BORING NUMBER

02BS

SHEET 1

OF 1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION OWS (Site 2)

ELEVATION 198.7' (Gr.)

DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT

HSA, 3 1/4" ID

WATER LEVELS

START 2-28-91
(0820 hrs)FINISH 2-28-91
(0930 hrs)

LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	0.8'	4-5-4 (9)	Silty Clay with Sand (CL-ML) - Tan-lt. grey, moist, stiff, contain slight organic material with roots	Chem. Analysis (1S)
4		2S	1.5'	4-4-5 (9)	Silty Clay (CL-ML) - Tan-lt. grey, moist, stiff	
6		3S	1.5'	5-5-5 (10)	Silty Clay (CL-ML) - Greenish grey-tan, moist, stiff, slightly organic	
8		4S	1.5'	2-4-8 (12)	Silty Clay (CL-ML) - Mottled brown-tan-grey, moist, stiff, ferruginous, slightly calcareous (sand)	
10		5S	0.8'	2-5-6 (11)	Silty Clay (CL-ML) - Similar to 4S	
12		6S	1.5'	5-4-7 (11)	Silty Clay (CL-ML) - Similar to 4S	HNV scan over split spoon sample shows 5-10 ppm
14		7S	1.2'	8-11-14 (25)	Silty Clay (CL-ML) - Similar to 4S	Chem. Analysis (7S) HNV scan 0-2 ppm
16		8S	1.5'	12-16-32 (48)	Silty Clay (CL-ML) - Similar to 4S - lower 0.5' is Chalk-lt.-med. grey, moist, hard, silty	
18		9S	1.5'	16-30-50/4 (80)	Chalk - Slightly weathered tan-grey in upper 0.5' - lower 1.0' is greenish grey, moist, hard	Chem. Analysis (9S)
					Boring terminated @ 18ft bgs-- annulus grouted to surface	Soil HNV Headspace (ppm) 2S = 0.4 3S = 0.8 5S = 0.5 6S = 20 8S = 22 9S = 38

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
03BS

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION OWS(Site 2)
ELEVATION 199.3' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75
WATER LEVELS _____ START 3-6-91 FINISH 3-6-91 LOGGER B. Carlisle
(1505 hrs)

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	1.0	2-4-6 (10)	<u>Sandy, Silty Clay (CL-ML)</u> -Mottled brown-red, moist, stiff, organic material and roots present	Chem. Analysis (1S)
4		2S	1.5	2-2-2 (4)	<u>Silty Clay (CL-ML)</u> -Mottled brown-red, moist, soft	
6		3S	1.5	3-6-8 (14)	<u>Silty Clay (CL-ML)</u> -Mottled brown-tan w/ lt. grey silt (calcareous), moist, stiff	
8		4S	1.2	7-9-12 (21)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except v. stiff	Chem. Analysis (4S)
10		5S	2.0	---	<u>Silty Clay (CL-ML)</u> -Similar to 4S as noted from open ends of Shelby Tube	Shelby Tube (5S)
12		6S	1.5	8-12-23 (35)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except hard, lower 0.2' is chalky, lt. grey to brownish-green (weathered)	
14		7S	1.5	22-35-50/5 (85)	<u>Silty Clay (CL-ML)</u> -Similar to lower 0.2' in 6S. Lower 1.0' is <u>Chalk</u> -Greenish grey to olive, moist, hard, silty	Chem. Analysis (7S)
17		8S	3.0	CORE	<u>Chalk</u> -Similar to lower 1.0' in 7S	3' Core of Mooreville Chalk
					Boring terminated @ 17ft. bgs-Annulus grouted to surface	
						Soil HNU Headspace (ppm) 2S = 5ppm 3S = 10ppm 6S = 60ppm



PROJECT NUMBER

MGM27526.SI

BORING NUMBER

04BS

SHEET

1

OF 1

SOIL BORING LOG

PROJECT Dannelly ANG

LOCATION OWS (Site 2)

ELEVATION 199.2' (Gr.)

DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA

DRILLING METHOD AND EQUIPMENT HSA, 3 1/2" ID, CME 75

WATER LEVELS START 3-1-91 (1030-hrs) FINISH 3-1-91 (1150)

LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	1.2	3-5-6 (11)	Sandy Organic Topsoil Upper 0.4'-Silty Clay (ML-CL) - Lower 0.8'-mottled tan-lt grey, moist, stiff	Chem. Analysis (1S)
4		2S	1.5	5-4-5 (9)	Silty Clay (ML-CL) - Similar to lower 0.8' of 1S	
6		3S	1.5	4-4-7 (11)	Silty Clay (ML-CL) - Similar to lower 0.8' of 1S except slight calcareous sand content	
8		4S	1.0	4-8-11 (19)	Silty Clay (ML-CL) - Similar to lower 0.8' of 1S except v. stiff, chalky	Chem. Analysis (4S)
10		5S	2.0	Shelby Tube	Silty Clay (ML-CL) - Similar to lower 0.8' of 1S as noted from open ends of Shelby Tube	Shelby Tube (5S)
12		6S	1.5	8-10-16 (26)	Silty Clay (ML-CL) - Tan-lt. grey, moist, v. stiff, chalky (weathered) slight organic material noted (roots)	
14		7S	1.5	4-8-24 (32)	Silty Clay (ML-CL) - Similar to 6S except hard - No organics noted lower 0.2' is Chalk, greenish grey, silty, hard	
16		8S	1.5	28-35-38 (73)	Chalk w/interlayered silty clay. Chalk is olive green to grey, moist, hard	Chem. Analysis (8S)
					Boring terminated @ 16' bgs-Annulus grouted to surface	
						Soil HNU Headspace (ppm) 2S = 230 3S = 20 6S = 300 7S = 150 *Note-Boring redrilled and sampled 3/6/91 due to sample shipping problems

PROJECT NUMBER
MGM27526.SI.FKBORING NUMBER
05BS

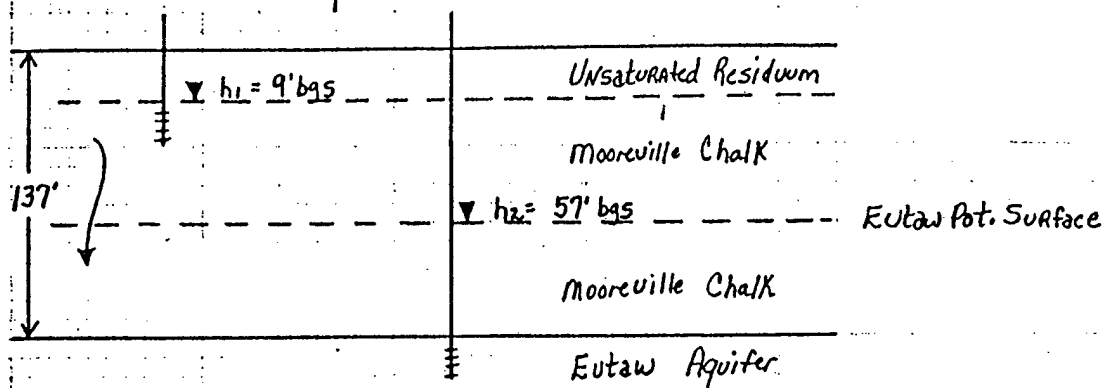
SHEET 1 OF 1

SOIL BORING LOG

PROJECT Dannelly ANG LOCATION OWS (Site 2)
ELEVATION 199.1' (Gr.) DRILLING CONTRACTOR Kilman Bros./Stone Mt. GA
DRILLING METHOD AND EQUIPMENT HSA, 3 1/4" ID, CME 75
WATER LEVELS 3-6-91 START (1310 hrs) FINISH 3-6-91 (1350 hrs) LOGGER B. Carlisle

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)			
2		1S	0.9	3-4-4 (8)	<u>Sandy Silty Clay (CL-ML)</u> -Brown-tan w/ lt. grey silt, moist, firm, organic w/ roots	Chem. Analysis (1S)
4		2S	1.5	2-2-2 (4)	<u>Silty Clay with Sand (CL-ML)</u> -Brown-tan, wet, soft, organic material and roots present	
6		3S	1.5	2-5-4 (9)	<u>Silty Clay (CL-ML)</u> -Mottled tan-lt. grey, moist, stiff, clacareous silt/sand present	
8		4S	1.5	2-3-2 (5)	<u>Silty Clay (CL-ML)</u> -Similar to 3S except firm	
10		5S	1.0	4-4-8 (12)	<u>Silty Clay (CL-ML)</u> -Similar to 3S	Chem. Analysis (5S)
12		6S	1.5	5-6-10 (16)	<u>Silty Clay (CL-ML)</u> -Tan-lt. grey, moist, v. stiff, thin chalky laminae present	
14		7S	1.2	11-12-15 (27)	<u>Silty Clay (CL-ML)</u> -Mottled tan-brown w/ lt. grey silty laminae, moist, v. stiff, lower 0.2' is Chalk-Brown-greenish grey, slightly sandy-silty	Chem. Analysis (7S)
					Boring terminated @ 14' bgs- Annulus grouted to surface	
						Soil HNU Headspace (ppm) 3S = 5 4S = 11 6S = 110

Appendix E
COMPUTATION OF VERTICAL HYDRAULIC
GRADIENT AND SEEPAGE VELOCITY

SUBJECT SI - DANIELLY AIR National GuardBY B. Carlisle DATE 6/24/91SHEET NO. 1 OF 2PROJECT NO. MGMT 7526 SI.RPI Computation of Vertical Hydraulic Gradient

$$i_v = \frac{\Delta h_v}{\Delta h}$$

i_v = vert. hyd. gradient
 Δh = change in head

L = Saturated Chalk thickness

$$i_v = \frac{57' - 9'}{137' - 9'}$$

$$i_v = \frac{48'}{128'}$$

$$i_v = .38 \text{ downward through the Mooreville Chalk}$$

II Computation of Average Vertical Hydraulic Conductivity (K)

$$\frac{\log_{10}(K_1) + \log_{10}(K_2) + \log_{10}(K_3)}{3} = \bar{x}$$

K = Conductivity values from SI

\bar{x} = log Average calculation for K

$$\frac{\log_{10}(1.3 \times 10^{-6} \text{ cm/sec}) + \log_{10}(1.3 \times 10^{-8} \text{ cm/sec}) + \log_{10}(7.2 \times 10^{-9} \text{ cm/sec})}{3} = \bar{x}$$

$$= 21.67 / 3 = \bar{x} = 7.22$$

$$10^{-7.22} = K_{av}$$

$$6 \times 10^{-8} \text{ cm/sec} = K_{av}$$

III Computation of Seepage Velocity through Residuum/Chalk

$$v = \frac{K i}{n}$$

v = Seepage velocity

i = vert. hyd. grad. (Calc. in I)

K = Hyd. Cond. of Chalk/Residuum (Calc. in II)

n = Porosity (Av. value from John Scott, personal comm)

$$v = 6 \times 10^{-8} \text{ cm/sec} (.38) / .3$$

$$v = 7.6 \times 10^{-8} \text{ cm/sec.}$$

$$\text{or } v = 2.2 \times 10^{-4} \text{ Ft/day}$$

IV Computation of TRAVEL time through the Residuum/Chalk to the Eutaw Aquifer

$$T = D/V$$

T = time

D = Distance (thickness of saturated chalk at base)

V = Seepage Velocity (See III)

$$T = 1281 / 2.2 \times 10^{-4} \text{ ft/day}$$

Time = 581, 818. days or 1,594 years to reach the Eutaw Aquifer

V Computation of Dilution Factor

$$Q_m = K i A$$

 Q_m = Rate of flow or volume per unit time in the Mooreville

K = Hydraulic Conductivity of Res./Chalk (See II)

i = Vert. gradient (See I)

A = Unit cross-sectional area

$$Q_m = 6 \times 10^{-8} \text{ cm/sec} (.38) (1 \text{ cm}^2)$$

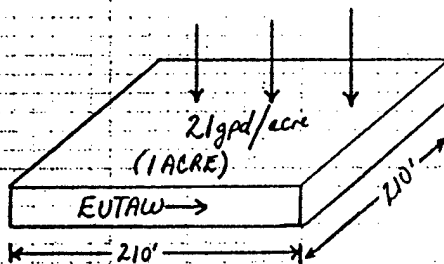
$$Q_m = 6 \times 10^{-8} \text{ cm/sec} \left(\frac{1 \text{ inch}}{2.54 \text{ cm}} \right) \left(\frac{1 \text{ ft}}{12 \text{ inches}} \right) \left(\frac{86400 \text{ sec}}{1 \text{ day}} \right) (.38) (1 \text{ cm}^2)$$

$$Q_m = 6.5 \times 10^{-5} \text{ ft/day}$$

$$Q_m = 6.5 \times 10^{-5} \text{ ft/day} (7.48 \text{ gal/ft}^3)$$

$$Q_m = 4.9 \times 10^{-4} \text{ gal/day/ft}^2 \left(\frac{43,560 \text{ ft}^2}{1 \text{ acre}} \right)$$

$$Q_m = 21 \text{ gpd/acre downward seepage from Mooreville}$$



$$Q = T I W$$

$$Q_E = 28,000 \text{ gpd/ft} (.002) (210 \text{ ft})$$

$$Q_E = 11,760 \text{ gpd}$$

 Q_E = Quantity of water moving through a known width of an aquifer (Eutaw)

T = Av. transmissivity of Eutaw from Geol. Survey Water Supply Paper 1606 by Knowles, Reade, Scott, 1963

I = Est. EUTAW Gradient from USGS Susceptibility Study, 1987

W = aquifer width

$$\text{Dilution factor} = Q_{\text{chalk}} / Q_{\text{EUTAW}}$$

$$= 21 \text{ gpd} \div 11,760 \text{ gpd}$$

$$= 1 \text{ gal}_{\text{CK}} : 560 \text{ gal}_{\text{EUT}}$$

Appendix F
DATA REVIEW AND VALIDATION PROCEDURES

TO: Margaret Corey

FROM: Ann Castleberry
Ann West/WDC

DATE: January 7, 1992

SUBJECT: Data Review and Validation for Dannelly ANG

PROJECT: MGM27526.SI.QC

1. INTRODUCTION

Soil and water samples were collected as part of the Dannelly Field, Alabama Air National Guard Site Investigation (SI). The purpose of this memorandum is to summarize the criteria used and the results of the review and validation process. The data results are discussed in the main body of the SI report and are not included in this memorandum. Data validation is the technical review of a data package using criteria established in the Data Quality Objectives of the Quality Assurance Project Plan.

All the samples were submitted to and analyzed by two CH2M HILL laboratories located in Montgomery, Alabama, and Redding, California.

2. DATA PACKAGE DELIVERABLES

When samples were submitted to the laboratory, they were assigned 8-digit unique numerical sample identifiers. The first 5 digits of the laboratory sample number identify the sample batch, and the last 3 numbers indicate each unique field sample. Attachment 1 is a summary of all the field samples submitted to the two laboratories, and the corresponding laboratory numerical sample identifier and the requested analytical parameters.

As indicated in Attachment 1, samples were submitted for either HAZWRAP Level B or C QC. For this specific project, only TPH was analyzed using Level B QC; Level C data package deliverables were provided for the other analytical methods.

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Level B data package deliverables included:

- Sample results
- Method blank results
- Initial calibration data
- Continuing calibration data
- Spiked sample results

Level C data package deliverables are summarized in Table 1.

3. LEVEL B REVIEW CRITERIA

Level B data did not undergo a formal validation process; rather, these data were reviewed for compliance with holding time, calibration, and completeness criteria as outlined below.

HOLDING TIME

Holding time is defined as the time, in days, from sample collection to sample analysis. The holding time for TPH analysis is 28 days.

CALIBRATION

Initial calibration data are used to demonstrate that the analytical instrument is performing satisfactorily and is capable of producing acceptable quantitative data at the beginning of the analytical period. Continuing calibration checks document that the instrument continues to produce acceptable data.

TPH calls for an initial 3-point calibration with a zero intercept. Samples with a TPH concentration greater than the highest calibration standard were diluted and reanalyzed. Continuing calibration checks were performed after every 10th sample.

COMPLETENESS

Completeness can have two meanings. First, it can mean that all the data package deliverables are present and reviewed. Second, completeness can be expressed as the percentage of measurements made that are judged to be valid.

Table 1
Level C Data Package Deliverables

ORGANICS--GC/MS

Form	Purpose
I	Sample results
II	Surrogate spike results
III	MS/MSD spike results
IV	Method blank data
V	GC/MS tuning data
VI	Initial calibration data
VII	Continuing calibration data
VIII	Internal standard area data

ORGANICS--GC

I	Sample results
II	Surrogate spike results
III	MS/MSD spike results
IV	Method blank data
VI	Initial calibration data
VII	Continuing calibration data
**	Second column confirmation data

METALS

I	Sample results
II	Initial and continuing calibration data
III	Method blank results
IV	ICP interference check sample results
V	Spike recovery data
VI	Duplicate sample results
VII	Laboratory control sample results
VII	Standard addition results
X	Holding times

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4. LEVEL C REVIEW AND VALIDATION CRITERIA

Samples that were analyzed using CLP methods were reviewed and validated using CLP guidelines. When non-CLP methods were used, the data were reviewed and validated in the same manner using laboratory-specific acceptance criteria.

ORGANIC ANALYSES

Organic data were generated using CLP methods and were reviewed and validated using the guidance document "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses," 1988 revision. As mentioned above, when non-CLP methods were used, the data were reviewed and validated in the same manner using laboratory-specific acceptance criteria. This guidance document lists criteria for evaluating the data package form by form. The raw experimental data were summarized and presented in the appropriate form because no raw data were included in the data package.

Also included with the sample results are Tentatively Identified Compounds (TICs) results. When compounds not on the target compound list (TCL) are detected, the instrument searches its mass spectre database looking for the closest match. Because TICs are not included in the calibration process and are only identified by the mass spectre, they are considered to be tentatively identified. Additionally, quantitation of TICs is approximate because it is not known how efficiently the compound responds to the detector. Therefore, TICs are considered to be indicative of a class or type of compound at an approximate concentration, but calibration is necessary for greater definition.

Form I, Data Results

This form presents the sample results and the information necessary for calculating holding times, and is also reviewed for completeness. Holding time is defined as the time, in days, from sample collection to sample extraction/analysis. It is important to note that the holding time for extraction often is different for water and soil samples for the same analytical method. Holding times are summarized in Table 2.

Form II, Surrogate Recovery

This form summarizes the surrogate spike recovery information. Surrogate spike recoveries are used to demonstrate laboratory performance and to evaluate matrix interference. Surrogate compounds are the structural homologs of target list

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Form V, GC/MS Tuning and Mass Calibration

This form presents the tuning and mass calibration information for each GC/MS instrument used to produce data for the sample delivery group. The CLP SOW establishes tuning and performance criteria in order to ensure mass resolution, identification, and to some degree sensitivity. These criteria are not sample specific; conformance is determined using standard materials at least once during each 12-hour analytical period. Therefore, these criteria should be met in all circumstances. Bromofluorobenzene (BFB) is used for volatile analyses, and Decafluorotriphenylphosphine (DFTPP) is used for semivolatile analyses. Gas chromatographs are calibrated and not tuned, so there is no tuning or mass calibration information for GC analyses.

Form VI, Initial Calibration

This form is used to report compound recoveries from the initial calibration solutions. Initial calibration data are used to demonstrate that the analytical instrument is performing satisfactorily and is capable of producing acceptable quantitative data at the beginning of the analytical period. Initial calibration is performed in accordance with the applicable analytical method. Acceptance limits are also defined by the analytical method, when recoveries do not fall within the acceptance limits, analysis of field samples is stopped, the problem identified and resolved, and the instrument recalibrated before sample analysis begins.

Form VII, Continuing Calibration

This form is used to report continuing calibration check sample recoveries. Continuing calibration checks document that the instrument continues to produce acceptable data. Continuing calibration check samples are analyzed at a frequency required by the analytical method, and at least immediately before and after an analytical period. Acceptance limits are also defined by the analytical method. When recoveries do not fall within the acceptance limits, analysis of field samples is stopped, the problem identified and resolved, and the instrument recalibrated before sample analysis begins.

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Form VIII, Internal Standards

This form presents the internal standards peak area information. Internal standard compounds are used to ensure that instrument sensitivity and response are stable during each analytical sequence. Acceptance criteria are defined either in the CLP SOW or the specific analytical method.

INORGANIC ANALYSES

All the inorganic data were generated using CLP methods and were reviewed and validated using the guidance document "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses," 1988 revision. This guidance document lists criteria for evaluating the data package form by form. The raw experimental data were summarized and presented in the appropriate form since no raw data were included in the data package.

Form I, Sample Results

The form is similar to the organic form in that it summarizes the sample results; however, a separate form (Form X) is used to calculate sample holding time.

Form II, Initial and Continuing Calibration Verification

This form is similar to the organic form in that it summarizes the calibration results and is used to evaluate initial and continuing calibration. Form IIB is used to demonstrate that the laboratory was capable of analyzing below the CRDL at the time of analysis. The laboratory analyzes a standard solution that is twice the instrument detection limit (IDL) to verify the linearity of the instrument at low detection limits.

Form III, Blanks

This form is used to report analyte concentrations detected in the initial calibration blank (ICB), continuing calibration blanks (CCB), and the preparation blanks (PB). As mentioned in the organics section, method blanks are used to monitor the presence and magnitude of contamination introduced during the analytical process.

One method blank was analyzed for every 20 samples, or one per analytical batch, whichever was more frequent. ICBs, CCBs, and PBs were analyzed at the frequency required by the CLP SOW.

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Form IV, ICP Interference Check Sample (ICS)

This form is used to report ICS results for each ICP instrument used. The ICS sample is a mixture of analytes that have a potential for interference and is performed to verify the laboratory's interelement and background correction factors.

Form VA, Pre-digestion Spike Recovery

This form is used to report results for the pre-digestion spike recovery. This spike recovery measurement is analogous to the MS/MSD in that it provides a measure of the effects of the specific sample matrix on the sample results. Additionally it provides a measure of the efficiency of the digestion process. If the pre-digestion spike recovery does not fall within the 75 to 125 percent recovery window, then a post-digestion spike is added and the sample reanalyzed.

Form VB, Post-Digestion Spike Recovery

This form is used to report post-digestion spike results when they are necessary. The acceptance limits for post-digestion spike recoveries are also 75 to 125 percent. If both the pre- and post-digestion spike recoveries are outside these acceptance limits, then this is considered positive evidence of matrix interference and the data are flagged appropriately.

Form VI, Duplicates

This form is used to report duplicate laboratory results rather than field duplicate sample results. Duplicate laboratory samples differ from MS/MSD samples in that the duplicate sample is not spiked; therefore, precision must be estimated using native rather than spiked results. For this reason, laboratory duplicates were performed only on field samples and not field QC samples.

Form VII, Laboratory Control Sample (LCS) Results

This form is used to report the recovery results for the standard LCS. The LCS analysis is designed to monitor the efficiency of the digestion process. Analyte recoveries must fall within 90 to 110 percent; if not, the data are flagged.

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Form VIII, Standard Addition Results

This form is used to report the results of samples analyzed using the method of standard addition and is used only for Graphite Furnace Atomic Absorption analyses. Duplicate injections and furnace post-digestion spike recoveries are used to establish the precision and accuracy of the individual analytical determinations. Samples must be analyzed using the method of standard addition if the analyte concentration is greater than five times the CRDL. The CLP SOW requires that the results agree within ± 20 percent relative standard difference or else the data is qualified.

Form IX, ICP Serial Dilution Results

ICP serially diluted samples are used to monitor whether significant physical or chemical interferences exist as a result of sample matrix effects. The sample is diluted and the results compared (diluted versus undiluted) for agreement for any analyte whose concentration is 50 times greater than the IDL.

Form X, Holding Times

This form is used to report holding times for mercury and cyanide analyses. Sample results that are not analyzed within the holding time are flagged to indicate a low bias.

QUALIFYING FLAGS

Samples that did not meet the acceptance limit criteria were qualified with a flag, single letter abbreviations that indicate a problem with the data. Although the flags originate in the data validation section, they are included in the data summary tables (in the main body of the text) so that data will not be used indiscriminately. Flags used in this text include:

- U Undetected. Analyte was analyzed for but not detected above the method detection limit.
- B The analyte was detected in both the field sample and the corresponding method blank.
- J Estimated. The analyte was present, but the reported value may not be accurate or precise.

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It is important to note that the data summary form, Form I, may also have flags on them and the usage is the same as above with two major additions. For organic results, data that are above the method detection limit but below the contract required detection limit (CRDL) are flagged with a J. For inorganic results, if the analyte was detected above the instrument detection limit, but below the CRDL, then the result is flagged with a B.

5. RESULTS AND CONCLUSIONS

The data were reviewed and validated as indicated in the preceding sections. As each data package was reviewed, a worksheet was completed for each analysis. A blank worksheet is shown in Figure 1. These worksheets were developed to act as a checklist for the data reviewer and are included in Attachment 2 to this appendix. Any non-conformances with the data package were noted on the worksheet and then appropriate flags were assigned to the data.

Acetone and methylene chloride are used as extraction solvents; hence, they are common laboratory contaminants. When detected in a sample, the concentration reported is the actual concentration in the sample; blank subtraction (concentration in the corresponding method blank minus the concentration in the sample) was not used. Therefore all the Acetone and methylene chloride detected in these specific samples can be attributed to laboratory contamination.

Five organic compounds were detected in the subsurface soil samples collected at Site 2:

- Acetone
- Carbon disulfide
- Di-n-butylphthalate
- Methylene chloride
- bis(2-ethylhexyl)phthalate

These compounds were detected in the corresponding field and laboratory blanks; therefore, they can be attributed to field and laboratory contamination.

The data are acceptable as is and can be used in the decision-making process without further qualification.

DATA VALIDATION

CASE: _____ SITE: _____ ANALYSIS: _____

LAB NOTES: _____

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil _____ Water _____

CALIBRATION

Initial: _____

Continuing: _____

COEFFICIENT: _____

BLANKS

Method: _____

Field: _____

FIELD DUPLICATES: _____

SURROGATES: _____

MS/MSD: _____

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: _____

Attachment 1
DATA INVENTORY TABLE

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

Date: 10-Jun-91
Time: 02:07 PM
Filename: 27526COC.WK1

SITE	FIELD SAMPLE	ID	SAMPLED DATE	QC LEVEL	MATRIX	MGM		TOTAL			TPH	PAH	BTEX	DATE	
						LAB	NUMBER	VOC	SV	METALS	METALS			SUBMITTED	TO LAB
4	A1-SS-0-6		02/21/91	C	SOIL		17894-001					X		02/22/91	
4	A1-SS-6-24		02/21/91	C	SOIL		17894-002					X		02/22/91	
4	A2-SS-0-6		02/21/91	C	SOIL		17894-003					X		02/22/91	
4	A2-SS-6-24		02/21/91	C	SOIL		17894-004					X		02/22/91	
4	A3-SS-0-6		02/21/91	C	SOIL		17894-005					X		02/22/91	
4	A3-SS-0-6DUP		02/21/91	C	SOIL		17894-006					X		02/22/91	
4	A3-SS-6-24		02/21/91	C	SOIL		17894-007					X		02/22/91	
4	A3-SS-6-24DUP		02/21/91	C	SOIL		17894-008					X		02/22/91	
4	A4-SS-0-6		02/21/91	C	SOIL		17894-009					X		02/22/91	
4	A4-SS-6-24		02/21/91	C	SOIL		17894-010					X		02/22/91	
4	A5-SS-0-6		02/21/91	C	SOIL		17894-011					X		02/22/91	
4	A5-SS-6-24		02/21/91	C	SOIL		17894-012					X		02/22/91	
4	A6-SS-0-6		02/22/91	C	SOIL		17894-013					X		02/22/91	
4	A6-SS-6-24		02/22/91	C	SOIL		17894-014					X		02/22/91	
4	A7-SS-0-6		02/22/91	C	SOIL		17894-015					X		02/22/91	
4	A7-SS-6-24		02/22/91	C	SOIL		17894-016					X		02/22/91	
4	A8-SS-0-6		02/22/91	C	SOIL		17894-017					X		02/22/91	
4	A8-SS-6-24		02/22/91	C	SOIL		17894-018					X		02/22/91	
QC	EQUIPMENT RINSE		02/22/91	C	WATER		17894-020					X		02/22/91	
4	A1-SS-6-24		02/21/91	C	SOIL		17898-001					X		02/22/91	
4	A4-SS-6-24		02/21/91	C	SOIL		17898-002					X		02/22/91	
4	A7-SS-6-24		02/21/91	C	SOIL		17898-003					X		02/22/91	

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FIELD EFFORT
DATA INVENTORY
ATTACHMENT 1
10-Jun-91

SITE	SAMPLE	ID	SAMPLED DATE	QC LEVEL	MATRIX	MGM				TOTAL SOLUABLE			PAH	BTEX	DATE SUBMITTED
						LAB	NUMBER	VOC	SV	METALS	METALS	TPH			
4	A7-SS-6-24DUP		02/21/91	C	SOIL		17898-004					X			02/22/91
BKGD	B3P-S-8.5-10		02/27/91	B	SOIL		17931-001					X			02/28/91
BKGD	B3P-S-13.5-15		02/27/91	B	SOIL		17931-002					X			02/28/91
BKGD	B3P-S-28.5-30		02/27/91	B	SOIL		17931-003					X			02/28/91
BKGD	B1P-S-0-2		02/26/91	B	SOIL		17937-001					X			02/27/91
BKGD	B1P-S-8.5-10		02/26/91	B	SOIL		17937-002								02/27/91
BKGD	B1P-S-18.5-20		02/26/91	B	SOIL		17937-003								02/27/91
BKGD	B1P-S-18.5-20DUP		02/26/91	B	SOIL		17937-004					X			02/27/91
BKGD	B3P-S-0-2		02/26/91	B	SOIL		17937-005					X			02/27/91
BKGD	B3P-S-8.5-10		02/26/91	B	SOIL		17937-006					X			02/27/91
BKGD	B3P-S-23.0-25		02/26/91	B	SOIL		17937-007					X			02/27/91
BKGD	B3P-S-23.0-25DUP		02/26/91	B	SOIL		17937-008								02/27/91
QC	TRAVEL BLANK		02/26/91	B	SOIL		17937-009								02/27/91
QC	ERB-01-2-26		02/26/91	B	SOIL		17937-010								02/27/91
2	02B-S-0-2		02/28/91	B	SOIL		17946-001					X			03/01/91
2	02B-S-12-14		02/28/91	B	SOIL		17946-002					X			03/01/91
2	02B-S-18-20		02/28/91	B	SOIL		17946-003					X			03/01/91
1	P2B-S-2-4		02/28/91	B	SOIL		17946-004					X			03/01/91
1	P2B-S-8-10		02/28/91	B	SOIL		17946-005					X			03/01/91
1	P2B-S-8-10DUP		02/28/91	B	SOIL		17946-006					X			03/01/91

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Filename: 27526COC.WK1

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FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

SITE	SAMPLE ID	DATE SAMPLED	QC LEVEL	MATRIX	MGM		VOC		SV		TOTAL METALS		SOLUBLE METALS		TPH	PAH	BTEX	DATE SUBMITTED
					LAB NUMBER	CLP	CLP	CLP	CLP	CLP	METALS	METALS	METALS	METALS				
1	P2B-S-12-14	02/28/91	B	SOIL	17946-007										X			03/01/91
1	P3B-S-2-4	02/28/91	B	SOIL	17946-008										X			03/01/91
1	P3B-S-6-8	02/28/91	B	SOIL	17946-009										X			03/01/91
1	P3B-S-12-14	02/28/91	B	SOIL	17946-010										X			03/01/91
1	P5B-S-4-6	02/28/91	B	SOIL	17946-011										X			03/01/91
1	P5B-S-8-10	02/28/91	B	SOIL	17946-012										X			03/01/91
1	P5B-S-12-14	02/28/91	B	SOIL	17946-013										X			03/01/91
2	O4BS-0-2	03/01/91	B	SOIL	17947-001										X			03/01/91
2	O4BS-6-8	03/01/91	B	SOIL	17947-002										X			03/01/91
2	O4BS-14-16	03/01/91	B	SOIL	17947-003										X			03/01/91
2	O4BS-14-16DUP	03/01/91	B	SOIL	17947-004										X			03/01/91
1	P1BS-2-4	03/05/91	B	SOIL	17966-001										X			03/05/91
1	P1BS-8-10	03/05/91	B	SOIL	17966-002										X			03/05/91
1	P1BS-8-10DUP	03/05/91	B	SOIL	17966-003										X			03/05/91
1	P1BS-12-14	03/05/91	B	SOIL	17966-004										X			03/05/91
1	P6BS-6-8	03/05/91	B	SOIL	17966-005										X			03/05/91
1	P6BS-8-10	03/05/91	B	SOIL	17966-006										X			03/05/91
1	P6BS-12-14	03/05/91	B	SOIL	17966-007										X			03/05/91
1	P7BS-6-8	03/05/91	B	SOIL	17966-008										X			03/05/91
1	P7BS-8-10	03/05/91	B	SOIL	17966-009										X			03/05/91
1	P7BS-12-14	03/05/91	B	SOIL	17966-010										X			03/05/91

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Time: 02:07 PM
Filename: 27526COC.WK1

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

SITE	FIELD SAMPLE	ID	SAMPLED DATE	QC LEVEL	MATRIX	MGM		VOC CLP	SV CLP	TOTAL		TPH	PAH	BTEX	SUBMITTED DATE
						LAB	NUMBER			METALS	METALS				
1	P4BS-2-4		03/05/91	B	SOIL		17966-011					X			03/05/91
1	P4BS-6-8		03/05/91	B	SOIL		17966-012					X			03/05/91
1	P4BS-12-14		03/05/91	B	SOIL		17966-013					X			03/05/91
1	P8BS-2-4		03/05/91	B	SOIL		17966-014					X			03/05/91
1	P8BS-6-8		03/05/91	B	SOIL		17966-015					X			03/05/91
1	P8BS-12-14		03/05/91	B	SOIL		17966-016					X			03/05/91
2	O4BS-0-2		03/06/91	B	SOIL		17978-001					X			03/06/91
2	O4BS-6-8		03/06/91	B	SOIL		17978-002					X			03/06/91
2	O4BS-14-16		03/06/91	B	SOIL		17978-003					X			03/06/91
2	O4BS-14-16DUP		03/06/91	B	SOIL		17978-004					X			03/06/91
2	O1BS-0-2		03/06/91	B	SOIL		17978-005					X			03/06/91
2	O1BS-10-12		03/06/91	B	SOIL		17978-006					X			03/06/91
2	O1BS-14-16		03/06/91	B	SOIL		17978-007					X			03/06/91
2	O5BS-0-2		03/06/91	B	SOIL		17978-008					X			03/06/91
2	O5BS-8-10		03/06/91	B	SOIL		17978-009					X			03/06/91
2	O5BS-12-14		03/06/91	B	SOIL		17978-010					X			03/06/91
2	O3BS-0-2		03/06/91	B	SOIL		17978-011					X			03/06/91
2	O3BS-6-8		03/06/91	B	SOIL		17978-012					X			03/06/91
2	O3BS-12-14		03/06/91	B	SOIL		17978-013					X			03/06/91
2	O3BS-12-14DUP		03/06/91	B	SOIL		17978-014					X			03/06/91
4	A1BS-0-2		03/07/91	B	SOIL		17995-001					X			03/07/91

Filename: 27526COC.WK1

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DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

SITE	FIELD		DATE	QC	MATRIX	MGM		TOTAL SOLUABLE			TPH	PAH	BTEX	DATE
	SAMPLE	ID				LAB	NUMBER	VOC	SV	METALS				
			SAMPLED	LEVEL				CLP	CLP				TO LAB	
4	A3-SS-0-6		02/22/91	C	SOIL	28891-005						X	04/23/91	
4	A3-SS-0-6DUP		02/22/91	C	SOIL	28891-006						X	04/23/91	
4	A3-SS-6-24		02/22/91	C	SOIL	28891-007						X	04/23/91	
4	A3-SS-6-24DUP		02/22/91	C	SOIL	28891-008						X	04/23/91	
4	A4-SS-0-6		02/22/91	C	SOIL	28891-009						X	04/23/91	
4	A4-SS-6-24		02/22/91	C	SOIL	28891-010						X	04/23/91	
4	A5-SS-0-6		02/22/91	C	SOIL	28891-011						X	04/23/91	
4	A5-SS-6-24		02/22/91	C	SOIL	28891-012						X	04/23/91	
4	A6-SS-0-6		02/22/91	C	SOIL	28891-013						X	04/23/91	
4	A6-SS-6-24		02/22/91	C	SOIL	28891-014						X	04/23/91	
4	A7-SS-0-6		02/22/91	C	SOIL	28891-015						X	04/23/91	
4	A7-SS-6-24		02/22/91	C	SOIL	28891-016						X	04/23/91	
4	A8-SS-0-6		02/22/91	C	SOIL	28891-017						X	04/23/91	
4	A8-SS-6-24		02/22/91	C	SOIL	28891-018						X	04/23/91	
QC	Trip Blank		02/22/91	C	WATER	28891-019						X	04/23/91	
QC	ER-1		02/22/91	C	WATER	28891-020						X	04/23/91	
BKGD	B1P-S-0-2		02/26/91	C	SOIL	28909-001	X	X	X				02/27/91	
BKGD	B1P-S-8.5-10		02/26/91	C	SOIL	28909-002	X	X	X				02/27/91	
BKGD	B1P-S-18.5-20		02/26/91	C	SOIL	28909-003	X	X	X				02/27/91	
BKGD	B1P-S-18.5-20DUP		02/26/91	C	SOIL	28909-004	X	X	X				02/27/91	
BKGD	B5P-S-0-2		02/26/91	C	SOIL	28909-005	X	X	X				02/27/91	
BKGD	B5P-S-8.5-10		02/26/91	C	SOIL	28909-006	X	X	X				02/27/91	

Date:

02:07 PM

Time:

27526COC.WK1

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT 1
10-Jun-91

SITE	FIELD SAMPLE	DATE SAMPLED	QC LEVEL	MATRIX	MGM		TOTAL SOLUBLE				PAH	BTEX	DATE SUBMITTED
					LAB NUMBER	SV CLP	VOC CLP	METALS METALS	TPH				
BKGD	B5P-S-23.0-25	02/26/91	C	SOIL	28909-007	X	X	X				02/27/91	
BKGD	B5P-S-23.0-25DUP	02/26/91	C	SOIL	28909-008	X	X	X				02/27/91	
QC	Travel Blank 2-26	02/26/91	C	WATER	28909-009	X						02/27/91	
QC	ERB-01-2-26	02/26/91	C	WATER	28909-010	X	X	X				02/27/91	
BKGD	B3P-S-8.5-10	02/27/91	C	SOIL	28922-001	X	X	X				02/28/91	
BKGD	B3P-S-13.5-15	02/27/91	C	SOIL	28922-002	X	X	X				02/28/91	
BKGD	B3P-S-28.5-30	02/27/91	C	SOIL	28922-003	X	X	X				02/28/91	
QC	ERB-02-2-27	02/27/91	C	WATER	28922-004	X	X	X				02/28/91	
2	02B-S-0-2	02/28/91	C	SOIL	28934-001	X	X					03/01/91	
2	02B-S-12-14	02/28/91	C	SOIL	28934-002	X	X					03/01/91	
2	02B-S-18-20	02/28/91	C	SOIL	28934-003	X	X	X				03/01/91	
1	P2B-S-2-4	02/28/91	C	SOIL	28934-004						X	03/01/91	
1	P2B-S-8-10	02/28/91	C	SOIL	28934-005						X	03/01/91	
1	P2B-S-8-10DUP	02/28/91	C	SOIL	28934-006						X	03/01/91	
1	P2B-S-12-14	02/28/91	C	SOIL	28934-007						X	03/01/91	
1	P3B-S-2-4	02/28/91	C	SOIL	28934-008						X	03/01/91	
1	P3B-S-6-8	02/28/91	C	SOIL	28934-009						X	03/01/91	
1	P3B-S-12-14	02/28/91	C	SOIL	28934-010						X	03/01/91	
1	P5B-S-4-6	02/28/91	C	SOIL	28934-011						X	03/01/91	
1	P5B-S-8-10	02/28/91	C	SOIL	28934-012						X	03/01/91	
1	P5B-S-12-14	02/28/91	C	SOIL	28934-013						X	03/01/91	

Date: 10-Jun-91
Time: 02:07 PM
Filename: 27526COC.WK1

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT 1
10-Jun-91

SITE	FIELD SAMPLE ID	DATE SAMPLED	QC LEVEL	MATRIX	MGM		VOC		SV		TOTAL METALS		TPH	PAH	BTEX	DATE	
					LAB	NUMBER	CLP		CLP		METALS	METALS				SUBMITTED	TO LAB
QC	ERB-03-2-28	02/28/91	C	WATER		28934-014									X	03/01/91	
QC	TRV-02-2-28	02/28/91	C	WATER		28934-015									X	03/01/91	
	P5-BW1	03/04/91	B	WATER		28972-001								X	X	03/05/91	
QC	FB-01-3-4	03/04/91	C	WATER		28973-001	X		X		X					03/05/91	
QC	Travel Blank	03/04/91	C	WATER		28973-002	X									03/05/91	
1	P1BS-2-4	03/05/91	C	SOIL		28998-001									X	03/06/91	
1	P1BS-8-10	03/05/91	C	SOIL		28998-002									X	03/06/91	
1	P1BS-8-10DUP	03/05/91	C	SOIL		28998-003									X	03/06/91	
1	P1BS-12-14	03/05/91	C	SOIL		28998-004									X	03/06/91	
1	P6BS-6-8	03/05/91	C	SOIL		28998-005									X	03/06/91	
1	P6BS-8-10	03/05/91	C	SOIL		28998-006									X	03/06/91	
1	P6BS-12-14	03/05/91	C	SOIL		28998-007									X	03/06/91	
1	P7BS-6-8	03/05/91	C	SOIL		28998-008									X	03/06/91	
1	P7BS-8-10	03/05/91	C	SOIL		28998-009									X	03/06/91	
1	P7BS-12-14	03/05/91	C	SOIL		28998-010									X	03/06/91	
1	P4BS-2-4	03/05/91	C	SOIL		28998-011									X	03/06/91	
1	P4BS-6-8	03/05/91	C	SOIL		28998-012									X	03/06/91	
1	P4BS-12-14	03/05/91	C	SOIL		28998-013									X	03/06/91	
1	P8BS-2-4	03/05/91	C	SOIL		28998-014									X	03/06/91	
1	P8BS-6-8	03/05/91	C	SOIL		28998-015									X	03/06/91	

Date: 10-Jun-91
Time: 02:07 PM
Filename: 27526COC.WK1

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

SITE	FIELD SAMPLE	ID	DATE SAMPLED	QC LEVEL	MATRIX	MGM		VOC CLP	SV CLP	TOTAL		TPH	PAH	BTEX	DATE SUBMITTED
						LAB	NUMBER			METALS	SOLUBLE METALS				
1	P8BS-12-14		03/05/91	C	SOIL		28998-016							X	03/06/91
QC	ERB-04-3-5		03/05/91	C	WATER		28998-017							X	03/06/91
QC	Travel Blank		03/05/91	C	WATER		28998-018							X	03/06/91
2	04BS-0-2		03/06/91	C	SOIL		29017-001	X	X						03/07/91
2	04BS-6-8		03/06/91	C	SOIL		29017-002	X	X	X					03/07/91
2	04BS-14-16		03/06/91	C	SOIL		29017-003	X	X						03/07/91
2	04BS-14-16DUP		03/06/91	C	SOIL		29017-004	X	X						03/07/91
2	01BS-0-2		03/06/91	C	SOIL		29017-005	X	X						03/07/91
2	01BS-10-12		03/06/91	C	SOIL		29017-006	X	X						03/07/91
2	01BS-14-16		03/06/91	C	SOIL		29017-007	X	X	X					03/07/91
2	05BS-0-2		03/06/91	C	SOIL		29017-008	X	X	X					03/07/91
2	05BS-8-10		03/06/91	C	SOIL		29017-009	X	X						03/07/91
2	05BS-12-14		03/06/91	C	SOIL		29017-010	X	X						03/07/91
2	03BS-0-2		03/06/91	C	SOIL		29017-011	X	X						03/07/91
2	03BS-6-8		03/06/91	C	SOIL		29017-012	X	X						03/07/91
2	03BS-12-14		03/06/91	C	SOIL		29017-013	X	X	X					03/07/91
2	03BS-12-14DUP		03/06/91	C	SOIL		29017-014	X	X	X					03/07/91
QC	ERB-05-3-6		03/06/91	C	WATER		29017-015	X	X	X					03/07/91
QC	Travel Blank		03/06/91	C	WATER		29017-016	X							03/07/91
QC	FB-03-3-7		03/07/91	C	WATER		29032-001	X	X	X					03/08/91
QC	FB-02-3-7		03/07/91	C	WATER		29032-002	X	X	X					03/08/91

Date: 10-Jun-91
Time: 02:07 PM
Filename: 27526COC.WK1

DANNELLY ANG
FIELD EFFORT
DATA INVENTORY
ATTACHMENT I
10-Jun-91

SITE	SAMPLE	ID	FIELD		DATE	QC	MATRIX	MGM		TOTAL				TPH	PAH	BTEX	SUBMITTED	DATE
			SAMPLED	LEVEL				LAB	NUMBER	VOC	CLP	SV	METALS	METALS				
QC	ERB-06-3-7		03/07/91	C			WATER		29032-003						X	X		03/08/91
1	P7BW		03/07/91	C			WATER		29032-004						X	X		03/08/91
QC	Travel Blank		03/07/91	C			WATER		29032-005	X								03/08/91
4	A1BS-0-2		03/07/91	C			WATER		29032-006						X	X		03/08/91
4	A1BS-8-10		03/07/91	C			WATER		29032-007						X	X		03/08/91
4	A1BS-16-18		03/07/91	C			WATER		29032-008						X	X		03/08/91
4	A3BS-0-2		03/07/91	C			WATER		29032-009						X	X		03/08/91
4	A3BS-8-10		03/07/91	C			WATER		29032-010						X	X		03/08/91
4	A3BS-18-20		03/07/91	C			WATER		29032-011						X	X		03/08/91
4	A3BS-18-20DUP		03/07/91	C			WATER		29032-012						X	X		03/08/91
QC	ERB-06-3-7		03/07/91	C			SOIL		29041-001						X	X		03/08/91
QC	P7BW		03/07/91	C			SOIL		29041-002						X	X		03/08/91
4	A2BS-4-6		03/08/91	C			SOIL		29046-001						X	X		03/09/91
4	A2BS-12-14		03/08/91	C			SOIL		29046-002						X	X		03/09/91
4	A2BS-18-20		03/08/91	C			SOIL		29046-004						X	X		03/09/91
QC	ERB-07-3-8		03/08/91	C			WATER		29046-005						X	X		03/09/91
4	A2BS-12-14DUP		03/08/91	C			SOIL		29046-003							X		03/09/91
QC	TRAVEL BLANK		03/08/91	C			WATER		29046-006							X		03/09/91

Attachment 2
DATA VALIDATION WORKSHEETS

DATA VALIDATION

CASE: 17894 SITE: 4 ANALYSIS: PAH

LAB NOTES: 3 re-extractions were past holding times (-5, -6, -7)

HOLDING TIMES: 2/25 (extract) - 2/21 (sampling) = OK

NUMBER OF SAMPLES: Soil 18 Water 1 - ERB

CALIBRATION

Initial: ok

Continuing: ok

COEFFICIENT:

BLANKS

Method: nothing found

Field: nothing found

* FIELD DUPLICATES: both dupa are at least 10x smaller conc. than native

SURROGATES: water ok soil - 73-115 ok terp d14_{aq.} = ok
soil = ok

MS/MSD: good

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: MGM doesn't have the co-elution problem RDD has.

The re-extraction concentrations^{of -5 and -7} were smaller than the original conc. which may have been due to non-homogeneity of sample +/- holding time expiration - I used conc. of original sample analysis.

DATA VALIDATION

CASE: 17898 SITE: 4 ANALYSIS: TPH

LAB NOTES: none

HOLDING TIMES: 3/18 am. - 2/21 am = 34 days

NUMBER OF SAMPLES: Soil 4 Water

CALIBRATION

Initial: ok

Continuing: ok

^r
COEFFICIENT: 0.9998

BLANKS

Method: no hits

Field: none

FIELD DUPLICATES: none

SURROGATES: not found

MS/MSD:

INTERNAL STANDARDS: TUNING: LCS - ok

OTHER:

SUMMARY: RESULTS 1 - U 2 - 32 mg/Kg 3 - 11.0 mg/Kg

4 - 9.1 " 5 - U -

DATA VALIDATION

CASE: 17931 SITE: BKGD ANALYSIS: TPH

LAB NOTES: no problems

HOLDING TIMES: 3/20 - 2/27 = 21 days

NUMBER OF SAMPLES: Soil 3 Water -

CALIBRATION

Initial: ok 1CV

Continuing: ok 1CV

COEFFICIENT: 0.9998

BLANKS

Method: nothing found

Field: none

FIELD DUPLICATES: none

SURROGATES: -

MS/MSD: 94.6 % R

INTERNAL STANDARDS: - TUNING: LCS - ok

OTHER: -

SUMMARY: 3 samples -001 5.4 mg/Kg

results: -002 572 " with 10x dilution

-003 28.4

DATA VALIDATION

CASE: 17937 SITE: BKGD ANALYSIS: TPH

LAB NOTES: _____

HOLDING TIMES: 3/20 analysis - 2/26 sampled - ok [28 day limit]

NUMBER OF SAMPLES: Soil 7 Water _____

CALIBRATION ICV - ok
Initial: CCV - ok

Continuing: CCV - ok

COEFFICIENT: 0.9999 ok

BLANKS
Method: no hits

Field: none

FIELD DUPLICATES: no 0% D

SURROGATES: NA

MS/MSD: no data

INTERNAL STANDARDS: NA TUNING: LCS - ok

OTHER: -2 + -3 not listed on inventory but is requested on C of C.

SUMMARY: There were concentrations detected in each sample -
range 3.6 - 10.0 mg/Kg

DATA VALIDATION

CASE: 17946 SITE: 2 + 1 ANALYSIS: TPH

LAB NOTES: no problems

HOLDING TIMES: 3/20 analysis - 2/28 sampled = 20 days

NUMBER OF SAMPLES: Soil 13 Water —

CALIBRATION

Initial: ICV - ok

Continuing: CCV - ok

COEFFICIENT: 0.9999

BLANKS

Method: no hits

Field: none

FIELD DUPLICATES: -5 + -6 not too good = 0 and 49.3

SURROGATES: —

MS/MSD: 98.6 %R = ok

INTERNAL STANDARDS: — TUNING: LCS - ok

OTHER: —

SUMMARY: Sample results: 4 non-detects

range - 4 - 297 mg/Kg

4 over 50; 5 under

In order: 16, 0, 0, 189, 0, ~~189~~ 49.3, 4, 297, 196, 0, 205, 33.9, 4.5

DATA VALIDATION

CASE: 17947 SITE: 2 ANALYSIS: TPH

LAB NOTES: no problems

HOLDING TIMES: 3/20 - 3/1 = 19 days

NUMBER OF SAMPLES: Soil 4 Water

CALIBRATION
Initial: ICV - ok

Continuing: CCV - ok

COEFFICIENT: 0.9999 r²

BLANKS
Method: no hits

Field:

FIELD DUPLICATES:

SURROGATES:

MS/MSD: 93.1% R

INTERNAL STANDARDS: TUNING: LCS. - ok

OTHER:

SUMMARY:

Sample	-1	12.8	mg/Kg
	-2	95.1	
	-3	37.8	
	-4	11.3	

DATA VALIDATION

CASE: 17966 SITE: 1 ANALYSIS: TPH

LAB NOTES: none

HOLDING TIMES: 3/27 analysis - 3/5 sampling = 22 days

NUMBER OF SAMPLES: Soil 16 Water

CALIBRATION

Initial: 1CV ok

Continuing: CCV ok

COEFFICIENT: 0.9999

BLANKS

Method: nothing found

Field: none

FIELD DUPLICATES: ok

SURROGATES:

MS/MSD: 93.7 %R

INTERNAL STANDARDS: TUNING: LCS = ok

OTHER:

SUMMARY: six samples - U ; seven samples below 10 mg/kg

Three big hits - -1 (585), -11 (538), -12 (275)

DATA VALIDATION

CASE: 17978 SITE: 2 ANALYSIS: TPH

LAB NOTES: no comments

HOLDING TIMES: 3/28 - 3/6 = 22 days

NUMBER OF SAMPLES: Soil 14 Water

CALIBRATION

Initial: ICV - ok

Continuing: CCV - ok

COEFFICIENT: 0.9997 ok = r²

BLANKS

Method: nothing found

Field: none

FIELD DUPLICATES: ok

SURROGATES:

MS/MSD: 98 % rec ok

INTERNAL STANDARDS: TUNING: LCS = ok

OTHER:

SUMMARY: Sample 1 - big hit 2120 mg/Kg

2 69.1

10 12.1

4, 8, 9 below 7

the 8 others - U

DATA VALIDATION

CASE: 17995 SITE: 4 ANALYSIS: TPH

LAB NOTES: no comments

HOLDING TIMES: 3/28 - 3/07 = 21 days

NUMBER OF SAMPLES: Soil 7 Water

CALIBRATION

Initial: 1CV 102.5%R ok

Continuing: CCV 102.9%R - ok

COEFFICIENT: 0.9997 R²

BLANKS

Method: no hits

Field: none

FIELD DUPLICATES: -6 + -7 no hits

SURROGATES:

MS/MSD: 100.6%R

INTERNAL STANDARDS: TUNING: LCS = 100.6% - ok

OTHER:

SUMMARY: no hits

DATA VALIDATION

CASE: 18000 SITE: 4 ANALYSIS: TPH

LAB NOTES: Method 418.1 (MOD)

HOLDING TIMES: 3/31 (analysis) - 3/08 (sampling) = 23

NUMBER OF SAMPLES: Soil 3 Water -

CALIBRATION

Initial: ICV - ok

Continuing: ok

COEFFICIENT: 0.9998 - ok

BLANKS

Method: no detects

Field: none

FIELD DUPLICATES: none

SURROGATES:

MS/MSD: 97.2%R - ok

INTERNAL STANDARDS: TUNING:

OTHER: Control chart LCS = ok

SUMMARY: no detects

DATA VALIDATION

CASE: 18301 SITE: BKGD ANALYSIS: VOC

LAB NOTES: _____

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil _____ Water 5

1 sample
1 dup
1 FB
1 ER
1 TRIP

CALIBRATION

Initial: ok

Continuing: ok in data analysed

only compds out were not in samples

COEFFICIENT: _____

BLANKS Field

Method: MeCl 3-22 Acetone 11-18 Toluene 2

Method

Field: MeCl 1-2 Acetone 9-14 4-methyl-2-Pentanone 2-2 Xylene 1
2 Hexanone - 2

FIELD DUPLICATES: _____

SURROGATES: ok d-8 Toluene wide fluctuation but within 3 sd.

MS/MSD: ok

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: _____

DATA VALIDATION

CASE: 18301 SITE: BKGD ANALYSIS: TOTAL + SOL INORGANICS

LAB NOTES: Se - 1:5 dilution due to background interference
spike R out

HOLDING TIMES: 4/25 analysis
H₂ 4/24 prep - 4/10 samp = 14 days

NUMBER OF SAMPLES: Soil Water 5 - 1 TOTAL
1 SOL

CALIBRATION
 Initial: ok 1 DUP
1 ER
1 FB

Continuing: ok

COEFFICIENT:

BLANKS
 Method: 0.1 Hg Pb 2.9 Ba 2.2 Cr 3.6

Field: Ba 2.7 Cr 2.7 Pb 1.3 Ag 10.5

FIELD DUPLICATES: similar Lab duplicates - all below CRDL

SURROGATES:

MS/MSD: 20.9
Se - 17.8 %R prespike - no problem - both below RDL

Se - post-dis. spike - 81.8 %R for the soluble sample; 78.8 for total sample
 INTERNAL STANDARDS: LCS - ok TUNING:

OTHER: LCS - Se = 84.1 %R - 91.8 %R - ok (Limits = 78-113)

SUMMARY:

DATA VALIDATION

CASE: 18311 SITE: BKGD ? ANALYSIS: VOC

LAB NOTES: no matrix spike, no exceptions

HOLDING TIMES: 4/21 analysis → 4/12 sampled = 9 days

NUMBER OF SAMPLES: Soil _____ Water 1

CALIBRATION
Initial: MeCl 26.7% RSD

Continuing: several over 25% D - MeCl. 28.2 - "J"

containing Wormholes 102 103 104 105

COEFFICIENT: _____

BLANKS

Method: MEC-1 Access 12

Field: none

FIELD DUPLICATES: none

SURROGATES: ok

MS/MSD: none

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: no hits except the two lab contaminants

DATA VALIDATION

CASE: 18311 SITE: BKGD ANALYSIS: INORGANIC SOL + TOTAL

LAB NOTES: *none*

HOLDING TIMES: Hg 4/25 - 4/12 = 13 days

NUMBER OF SAMPLES: Soil Water /

CALIBRATION

Initial: *sk*

Continuing: ok

COEFFICIENT: for furnace - ok

BLANKS

Method: *no hits*

Field: *none*

FIELD DUPLICATES: *none*

SURROGATES: —

MS/MSD: not requested

INTERNAL STANDARDS: - ~~TUNING:~~ LCS- all in

OTHER:

SUMMARY: no hits for total and soluble metals

Conductivity = 1640 $\mu\text{mhos/cm}$

DATA VALIDATION

CASE: 28891 SITE: 4 ANALYSIS: BTEX

LAB NOTES: low IS responses caused ³ surrogate %Ls to be out - ^{these} 3 were re-analyzed

HOLDING TIMES: 2/27 analysis - 2/21 sampled = OK

NUMBER OF SAMPLES: Soil 18 Water 2 = 1 Trip + 1 ERB

CALIBRATION

Initial: OK

Continuing: OK except for TBME %D but no hits

COEFFICIENT: OK for 4/1

BLANKS

Method: no hits

Field: no hits

FIELD DUPLICATES: no hits

SURROGATES: all high - range = 102 - 184 averaging about 140

MS/MSD: good

INTERNAL STANDARDS: 7s = low

TUNING: "

OTHER:

SUMMARY: no hits

1 2 3 5 4



Engineers
Planners
Economists
Scientists

BTEX SURROGATE RECOVERY

Instrument ID: GC-3600

		EPA-602/8020	
		Laboratory	Surrogate Recovery
		Reference No.	Fluorobenzene
Date			
2-25-91	--	Method Blank	126
2-25-91	--	28891 - 1	132
2-25-91	--	28891 - 2	130
2-25-91	--	28891 - 3	151
2-25-91	--	28891 - 4	132
2-25-91	--	28891 - 5	142
2-25-91	--	28891 - 6	147
2-26-91	--	28891 - 7	135
2-26-91	--	28891 - 8	140
2-26-91	--	28891 - 11	160 *
2-26-91	--	28891 - 12	166 *
2-26-91	--	28891 - 13	169 *
2-26-91	--	28891 - 14	144
2-26-91	--	Method Blank	132
2-26-91	--	28891 - 15	149
2-26-91	--	28891 - 16	142
2-26-91	--	28891 - 17	148
2-26-91	--	28891 - 18	143
2-26-91	--	28891 - 8 MS	102
2-26-91	--	28891 - 8 MSD	110
2-26-91	--	28891 - 19	130
2-27-91	--	28891 - 20	129
2-27-91	--	Method Blank	125
2-27-91	--	28891 - 9	145
2-27-91	--	28891 - 10	140
2-27-91	--	28891 - 11-RE	184 *
2-28-91	--	28891 - 12-RE	155 *
2-28-91	--	28891 - 13-RE	163 *
--	--		
--	--		

EPA 602/8020 surrogate standards reported as percent recovery.
NA = Not Analyzed.

Comments: * Surrogate outside control limits.

Approved By: Grey Jordan

jas25

000007

DATA VALIDATION

CASE: 28909 SITE: Background ANALYSIS: SVOC

LAB NOTES: ^① -001 needed dilution

^② method blank contamination

^③ MS/MSD from 29017-004

HOLDING TIMES: ^{ANA} 3/20 - ^{EXT} 2/28 - ^{semp} 2/26 - OK

NUMBER OF SAMPLES: Soil 8 Water 1

CALIBRATION

Initial: OK

Continuing: %D Benzoic Acid: 99.9; 4-Nitrophenol 28.2; Hexachloro-

cyclopentadiene 36.8; 2,4-Dinitrophenol 27.5; Benz[ghi]perylene 51.8

COEFFICIENT: ^{NA} 4,6-Dinitro-2-methyl phenol 30.7 + 44.4 1,2-Diphenylhydrazine 29.2

BLANKS Soil- BEHP-61

Method: Water- N-nitrosodiphenylamine - give .010 w B

Field: no conc. Action: Remove B from soil w^{adjusted} conc over 610

FIELD DUPLICATES: 007+008 not too similar -007 has 5 hits 008=1

SURROGATES: (less than 1/2 of 007 hit)

MS/MSD: _____

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: _____

+ attached page

*

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CH2M HILL/LRD Contract: S28909
 Lab Code: _____ Case No.: S28909 SAS No.: _____ SDG No.: GC-MS
 Instrument ID: 4600 Calibration date: 03/22/91 Time: 1503
 Lab File ID: 91M1BN1765 Init. Calib. Date(s): 03/04/91 03/05/91
 Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Phenol	* 0.804	0.894	-11.2 *
bis(2-Chloroethyl) Ether	0.705	0.815	-15.6
2-Chlorophenol	0.674	0.698	-3.6
1,3-Dichlorobenzene	0.779	0.789	-1.3
1,4-Dichlorobenzene	* 0.788	0.827	-4.9 *
Benzyl Alcohol	0.372	0.467	-25.5
1,2-Dichlorobenzene	0.735	0.761	-3.5
2-Methylphenol	0.547	0.587	-7.3
bis(2-Chloroisopropyl) Ether	1.029	1.354	-31.6
4-Methylphenol	0.621	0.650	-4.7
N-Nitroso-di-n-propylamine	# 0.431	0.551	-27.8 #
Hexachloroethane	0.307	0.289	5.9
Nitrobenzene	0.372	0.391	-5.1
Isophorone	0.728	0.788	-8.2
2-Nitrophenol	* 0.238	0.211	11.3 *
2,4-Dimethylphenol	0.320	0.295	7.8
Benzoic Acid	0.067	0.050	25.4
bis(2-Chloroethoxy) Methane	0.507	0.546	-7.7
2,4-Dichlorophenol	* 0.357	0.315	11.8 *
1,2,4-Trichlorobenzene	0.392	0.349	11.0
Naphthalene	1.013	0.970	4.2
4-Chloroaniline	0.447	0.469	-4.9
Hexachlorobutadiene	* 0.208	0.181	13.0 *
4-Chloro-3-methylphenol	* 0.321	0.308	4.0 *
2-Methylnaphthalene	0.687	0.622	9.5
Hexachlorocyclopentadiene	# 0.383	0.408	-6.5 #
2,4,6-Trichlorophenol	* 0.432	0.401	7.2 *
2,4,5-Trichlorophenol	0.396	0.456	-15.2
2-Chloronaphthalene	1.113	1.150	-3.3
2-Nitroaniline	0.352	0.414	-17.6
Dimethyl Phthalate	1.206	1.200	0.5
Acenaphthylene	1.666	1.792	-7.6
2,6-Dinitrotoluene	0.329	0.316	4.0
3-Nitroaniline	0.329	0.350	-6.4
Acenaphthene	* 0.946	1.034	-9.3 *
2,4-Dinitrophenol	# 0.189	0.134	29.1 #
4-Nitrophenol	# 0.071	0.083	-16.9 #

000183

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CH2M HILL/LRD Contract: V28909
 Lab Code: _____ Case No.: V28909 SAS No.: _____ SDG No.: GC-MS

Instrument ID: 5100 Calibration date: 03/01/91 Time: 0911

Lab File ID: 91M2VO1683 Init. Calib. Date(s): 02/22/91 02/22/91

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) _____

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Chloromethane	# 1.579	1.347	14.7 #
Bromomethane	1.262	1.293	-2.5
Vinyl Chloride	* 1.337	1.315	1.6 *
Chloroethane	0.604	0.593	1.8
Methylene Chloride	1.741	2.014	-15.7
Acetone	1.326	1.542	-16.3
Carbon Disulfide	3.504	3.140	10.4
1,1-Dichloroethene	* 1.026	1.029	-0.3 *
1,1-Dichloroethane	# 2.780	3.045	-9.5 #
1,2-Dichloroethene (total)	1.587	1.897	-19.5
Chloroform	* 3.063	3.808	-24.3 *
1,2-Dichloroethane	2.296	3.107	-35.3
2-Butanone (MEK)	0.093	0.113	-21.5
1,1,1-Trichloroethane	0.398	0.419	-5.3
Carbon Tetrachloride	0.487	0.566	-16.2
Vinyl Acetate	0.846	0.912	-7.8
Bromodichloromethane	0.682	0.906	-32.8
1,2-Dichloropropane	* 0.428	0.512	-19.6 *
cis-1,3-Dichloropropene	0.533	0.660	-23.8
Trichloroethene	0.387	0.496	-28.2
Dibromochloromethane	0.593	0.910	-53.5
1,1,2-Trichloroethane	0.351	0.527	-50.1
Benzene	0.928	1.089	-17.4
trans-1,3-Dichloropropene	0.527	0.701	-33.0
Bromoform	# 0.555	0.894	-61.1 #
4-Methyl-2-Pentanone	1.225	1.631	-33.1
2-Hexanone	1.086	1.501	-38.2
Tetrachloroethene	0.397	0.517	-30.2
1,1,2,2-Tetrachloroethane	# 0.943	1.324	-40.4 #
Toluene	* 0.732	0.856	-16.9 *
Chlorobenzene	# 0.916	1.172	-28.0 #
Ethylbenzene	* 0.424	0.530	-25.0 *
Styrene	0.835	1.103	-32.1
Xylenes (total)	0.489	0.635	-29.9
Toluene-d8 - SS	0.563	0.523	7.1
1,4-Bromofluorobenzene - SS	0.401	0.393	2.0
1,2-Dichloroethane-d4 - SS	1.026	1.092	-6.4

DATA VALIDATION

CASE: 28909 SITE: BKGD ANALYSIS: INORG

LAB NOTES: -001 diluted Pb in GFAA 1:10 to get reading
Lab reported Pb by ICP analysis for sample 1

HOLDING TIMES: No analysis time listed. (I used prep date on the spread sheet

NUMBER OF SAMPLES: Soil 7 Water 1

CALIBRATION

Initial: ok

Continuing: ok

Correlation
 COEFFICIENT: Not provided ICS - ok

BLANKS Aqueous - Sb - 8.2 Ba 2.6 Pb 1.0 Zn 4.2

Method: Soil Cu 11.1 Ag 1.4

* Field: Cu 2.4 Zn 5.0; Flag all adjusted concentrations below 25 Zn and Cu 12

FIELD DUPLICATES: -907 + -008 - good match

SURROGATES: -

MS/MSD: Pre-spike out because conc. too low for Hg + Se - no action

INTERNAL STANDARDS: NA TUNING: NA

OTHER: LCS - ok

→ SUMMARY: The CRDL for lead of 3 and for As of 10 could not be met when analysis was by ICP for both (IDL of 13 for As and 18 for Pb)

DATA VALIDATION

CASE: 28922 SITE: BKGD ANALYSIS: VOL

LAB NOTES: MeCl + Acetone in blank

MS/MSD with 29017-004

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil 3 Water 1 ERB - No trip blank *

CALIBRATION

Initial: MEK RRF of 0.090 - OK for Hazwrap (limit = 0.05)

Continuing: OK

COEFFICIENT: _____

BLANKS

Method: Not done for water ; Soil = MeCl 4 Acetone = 2

Field: _____ " 4 " 25

FIELD DUPLICATES: None indicated

SURROGATES: OK

MS/MSD: OK

INTERNAL STANDARDS: OK TUNING: OK

OTHER: _____

SUMMARY: There should have been a method blank for the water sample -
I can't find any done on that date
The soil blank associated with this case was dated a date earlier -
that may be a midnight analysis

Nothing besides blank contamination found above CRDL

DATA VALIDATION

CASE: 28922 SITE: BK&D ANALYSIS: SVOA

LAB NOTES: Blank contain. acceptable

MS/msd with 29017.004

HOLDING TIMES: W. 3/4 - 2/27 ok Soil 2/28 - 2/27 ok

NUMBER OF SAMPLES: Soil 3 Water 1

CALIBRATION

Initial: OK

Continuing: RRF for Benzoic Acid: 0.024 %D = 26.9 %D BCIE 36.9
H₂CCPDiene 36.8 %D = 64.2 Nitroaniline 36.6
%D dinitrophenol 27.5 Benzo (ghi) p. 57.6

COEFFICIENT:

BLANKS

W - nothing Soil. BENP. 6185 and dibutyl phthalate 43BT + some TICs
 Method: Neither blank listed was analyzed w/ batch but they were extracted w/ batch

Field: _____

FIELD DUPLICATES: none

SURROGATES: PHL-d5 106 out of 10-94 - only 1 so no action

MS/MSD: ok

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: No hits associated w/ CCalib. ∴ no flags

DATA VALIDATION

DAN-2

CASE: 28922 SITE: BKGD ANALYSIS: INORG

LAB NOTES: All blanks < CRDL ; Se spike, Pb spike out but acceptable

RPDs of As + Zn o.k. ; LCS varied for furnace but acceptable

MS/MSD in 28909

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil 3 Water 1

CALIBRATION

Initial: ok

Continuing: ok LCS: ok

COEFFICIENT: ICS: ok

Ag = Sb 8.2 ; Ba 2.6 ; Pb 1.0 ; Zn 4.2

BLANKS

Method: Soil: Cu 11.1 ; Ag 1.4

Field: Ba 3.7 ; Cu 72.1 Pb 21.9 Zn 50.1

FIELD DUPLICATES: No field dups

SURROGATES: _____

MS/MSD: ok

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: As analyzed by ICP - no explanation why in lab notes

since there were concentrations reported for all samples, it probably doesn't matter

SUMMARY: _____

DATA VALIDATION

CASE: 28934 SITE: 2 + 1 ANALYSIS: VOG

LAB NOTES: ⁽¹⁾ the 1st analysis for med level had invalid IC - the re-analysis was past holding times ⁽²⁾ MeCl + acetone in blanks

⁽³⁾ MS/MSD with 29017

HOLDING TIMES: 3/13 analysis - 2/28 sampled - 13 days for low
^{1st dilution - 14 days from extraction; 2nd dil - 18 days from extraction}
 NUMBER OF SAMPLES: Soil 3 Water -

CALIBRATION

Initial: Chloromethane 35.6% RSD ok

Continuing: 1,1,2-TCA 30.8% D chloromethane 27.6% D ^{not used} 28.6% D
^{not used}
MeCl - 99.9% D

COEFFICIENT: _____

BLANKS

Method: MeCl 4, 10 Acetone 6, 5

Field: none

FIELD DUPLICATES: none

SURROGATES: control charts show %R within range - ok

MS/MSD: _____

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: I used the concentration for the re-analysis that had a good calibration but was past holding times (24,000 µg/kg) rather than the invalid IC within acceptable " " (29,000 µg/kg). All other hits recorded from original analysis.

DATA VALIDATION

CASE: 28934 SITE: 2 ANALYSIS: SVOC

LAB NOTES: blank contam. ms/msd w 29017

HOLDING TIMES: 3/4 extract - 2/28 sampling = 4 days

NUMBER OF SAMPLES: Soil 3 Water -

CALIBRATION

Initial: ok

Continuing: Benzoic Acid 0.049 RRFSD + 26.9 %D

COEFFICIENT: -

BLANKS

Method: N-nitrosodiphenylamine (35) + BENP (34)

Field: none

FIELD DUPLICATES: none

SURROGATES: control charts in

MS/MSD:

INTERNAL STANDARDS: ok TUNING: ok

OTHER:

SUMMARY:

DATA VALIDATION

CASE: 28934 SITE: 2 ANALYSIS: INORG

LAB NOTES: (1) blank control, (2) Se pds out, Pb pds. out, dups out
(3) LCS

HOLDING TIMES: Hg 3/12 prep - 2/28 samp - 12 days

NUMBER OF SAMPLES: Soil 1 Water

CALIBRATION

Initial: ok

Continuing: ok

COEFFICIENT: no furnace data supplied

BLANKS

Method: Ag 1.4 Cu 11.1

Field: none

FIELD DUPLICATES: none ; lab dup form not included

SURROGATES:

MS/MSD:

INTERNAL STANDARDS: TUNING:

OTHER: ICS - ok

LCS - ok

SUMMARY: I couldn't find post-digestion results for furnace metals

This lab does not give analysis dates for metals - I used prep dates

Forms missing - 5A + 5B (pre + post d. spike)

6 (duplicates)

No control charts

DATA VALIDATION

CASE: 28934 SITE: 2 ANALYSIS: BTEX

LAB NOTES: ⁽¹⁾ Med level analysis for 8, 9, 11, 12 due to high PAH background
⁽²⁾ 5x dilution for -11 + 12 due to interference ⁽³⁾ $r^2 < 0.995$ for confirmation only
⁽⁴⁾ surrogate low for -11

HOLDING TIMES: ^{analy.} 3/07 - ^{low} 2/28 = 7 days + ^{extract} 3/11 - 2/28 = 11 days for mediums ok

NUMBER OF SAMPLES: Soil 10 Water 2 = 1 ERB + 1 TRIP

CALIBRATION

Initial: ok for BTEX compounds

Continuing: ok for " "

COEFFICIENT: original - ok confirmation - < .995

BLANKS

Method: no hits

Field: no hits

FIELD DUPLICATES: none

SURROGATES: 69%R for -11 but this sample showed highest concentrations - "J"
55%R for -10 - not mentioned in lab notes - 1 small hit - UJ for non-hits

MS/MSD: ok

INTERNAL STANDARDS: - TUNING: -

OTHER: control chart - within range

SUMMARY: low surrogate R for 2 samples

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

02B-S-12-14

Lab Name: CH2M HILL/LRD Contract: S28934

Lab Code: _____ Case No.: S28934 SAS No.: _____ SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 28934002

Sample wt/vol: _____ (g/mL) G Lab File ID: 91M1BN1784

Level: (low/med) LOW Date Received: 03/01/91

% Moisture: not dec. 21 dec. _____ Date Extracted: 03/04/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/23/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.87	700	J
2. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	9.85	190	BJ
3. 57-10-3	HEXADECANOIC ACID	23.07	590	J
4.	UNKNOWN	23.19	220	J
5.	UNKNOWN	24.39	270	J
6. 238-84-6	11H-BENZO[A]FLUORENE	26.31	220	J
7. 123-79-5	HEXANEDIOIC ACID, DIOCTYL ES	27.59	9600	J
8. 27208-37-3	CYCLOPENTA[CD]PYRENE	28.29	210	J
9. 205-82-3	BENZO[J]FLUORANTHENE	33.39	510	J
10.	UNKNOWN	40.16	190	J
11.	UNKNOWN	40.56	170	J

000127

A

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

02B-S-18-20

Lab Name: CH2M HILL/LRD Contract: S28934

Lab Code: Case No.: S28934 SAS No.: SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 28934003

Sample wt/vol: (g/mL) G Lab File ID: 91M1BN1785

Level: (low/med) LOW Date Received: 03/01/91

% Moisture: not dec. 23 dec. Date Extracted: 03/04/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/23/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.23	250	J
2.	UNKNOWN	5.97	190	J
3.	UNKNOWN	6.88	1000	J
4. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	9.84	280	BJ
5. 4032-93-3	HEPTANE, 2,3,6-TRIMETHYL-	10.54	190	J
6. 872-50-4	2-PYRROLIDINONE, 1-METHYL-	10.84	180	J
7. 57-10-3	HEXADECANOIC ACID	23.07	470	J
8.	UNKNOWN	24.39	520	J
9. 103-23-1	HEXANEDIOIC ACID, BIS(2-ETHY	27.57	3100	J

000145

Be

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

02B-S-0-2

Lab Name: CH2M HILL/LRD Contract: S28934

Lab Code: _____ Case No.: S28934 SAS No.: _____ SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 28934001

Sample wt/vol: _____ (g/mL) G Lab File ID: 91M1BN1783

Level: (low/med) LOW Date Received: 03/01/91

% Moisture: not dec. 22 dec. _____ Date Extracted: 03/04/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/23/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 147-85-3	L-PROLINE	5.17	260	BJ
2.	UNKNOWN	5.90	200	J
3.	UNKNOWN	6.83	1200	J
4. 79-34-5	ETHANE, 1,1,2,2-TETRACHLORO-	8.34	200	J
5. 4032-93-3	HEPTANE, 2,3,6-TRIMETHYL-	10.52	230	J
6. 17851-53-5	1,2-BENZENEDICARBOXYLIC ACID	22.25	210	J
7. 57-10-3	HEXADECANOIC ACID	23.07	330	J
8. 103-23-1	HEXANEDIOIC ACID, BIS(2-ETHY	27.54	560	J

000112

BC

DATA VALIDATION

CASE: 28934 SITE: 2 ANALYSIS: INORG

LAB NOTES: % R of Se ^{Pb} out % D of As, Zn out LCS variance
ms/msd w/ 28909 -001

HOLDING TIMES: Ag Prep 3/12 — Sampling 2/26 = 14 days

NUMBER OF SAMPLES: Soil 1 Water —

CALIBRATION

Initial: ok

Continuing: ok

COEFFICIENT: can't find

BLANKS

Method: Cu 11.1 Ag 1.4 Flag Cu with B; no Ag present

Field: None

FIELD DUPLICATES: None

SURROGATES: —

MS/MSD: No problem

INTERNAL STANDARDS: — TUNING: —

OTHER: —

SUMMARY: No analysis ^{dates} times recorded - I used prep time

DATA VALIDATION

CASE: 28972 SITE: 1 ANALYSIS: PAH

LAB NOTES: Sample had to be diluted 1:2

co-elution of indeno (1,2,3-cd)pyrene and dibenzo

(a, h) anthracene

HOLDING TIMES: 3/06 extract - 3/4 sampling = 2 days

NUMBER OF SAMPLES: Soil _____ Water 1

CALIBRATION

LIBRATION
Initial: %RSD for benzo(ghi)perylene - 30.18; confirm = 7.64

Continuing: %D for benzo(g,h,i) perylene - 40.63

COEFFICIENT: not found

BLANKS

Method: no hits

Field: none

FIELD DUPLICATES: none

SURROGATES: ok

MS/MSD: not requested

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: _____

1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

DATA VALIDATION

CASE: 28972 SITE: 1 ANALYSIS: BTEX

LAB NOTES: orig. analysis out of range - reanalysis at 5x dilution

diluted sample 3/18 - 3/4 = 14 days

HOLDING TIMES: exceeded for confirmation; orig analysis 3/14 - 3/4 = 10 days

NUMBER OF SAMPLES: Soil _____ Water 1
PSBW1

CALIBRATION

Initial: ok

Continuing: ok for target compounds (out for styrene, etc.)

COEFFICIENT: _____

BLANKS

Method: no detects

Field: _____

FIELD DUPLICATES: _____

SURROGATES: %R within control chart range

MS/MSD: ^{lot} note that acceptance criteria were met but no data included
(or requested)

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: _____

DATA VALIDATION

CASE: 28973 SITE: QC ANALYSIS: VOA

LAB NOTES: Travel Blank had to be diluted

MeCl + Acetone found in method blank

ms/msd w/ 29017-015

HOLDING TIMES: 3/11 - 3/04 - OK

NUMBER OF SAMPLES: Soil - Water 2

1 FB; 1 Trip Bl

CALIBRATION

Initial: RRF OK %RSD OK

Continuing: Chloromethane - 31.6%^D - not found in sample -

no action taken

~~Continuation~~

COEFFICIENT: ~~found~~ NA

BLANKS

Method: MeCl⁶ and Acetone 12

Field: MeCl Acetone

FIELD DUPLICATES: none

SURROGATES: OK

MS/MSD: _____

INTERNAL STANDARDS: OK TUNING: OK

OTHER: _____

SUMMARY: _____

DATA VALIDATION

CASE: 28973 SITE: QC ANALYSIS: SVOc

LAB NOTES: some blank contam. but within criteria
ms/msd with 29017-015

HOLDING TIMES: 3/04 ext - 3/04 - OK

NUMBER OF SAMPLES: Soil _____ Water 1 FB

CALIBRATION
Initial: RRF ok %RSD. ok

Continuing: Benzoic Acid - ^{3/19}-47.8 %D ; Benzo[ghi]perylene ^{3/27}-43.8%
Hexachlorobutadiene cyclopentadiene 29 %D

~~COEFFICIENT:~~ _____

BLANKS
Method: both compounds found in FB were found in method blank
Field: the 1 sample is a field blank

FIELD DUPLICATES: none indicated

SURROGATES: ok

MS/MSD: _____

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: _____

SUMMARY: _____

DATA VALIDATION

CASE: 28973 SITE: QC ANALYSIS: INORG

LAB NOTES: DUP + SPIKE w/ 29017.015 for all but Hg
28909.010 for Hg

HOLDING TIMES: No date of analysis given - ok using prep date

NUMBER OF SAMPLES: Soil Water 1

CALIBRATION

Initial: ok

Continuing: ok

^{Correlation}
COEFFICIENT: not found

BLANKS

Method: 5.9B Zn

Field: This one sample is a field blank - has a copper hit of 51.2

FIELD DUPLICATES: None

SURROGATES: —

MS/MSD:

INTERNAL STANDARDS: — TUNING: LCS : ok

OTHER:

SUMMARY:

DATA VALIDATION

CASE: 28998 SITE: 1 ANALYSIS: BTEX

LAB NOTES: Holding times exceeded for 2 samples and the ms/msd run.
-009 and -011 were diluted because of matrix interference

additional information attached

HOLDING TIMES: Analysis 3/15 - 20 - Sampling date 3/5 = 15 days

NUMBER OF SAMPLES: Soil 16 for -002 and -010 and MS/MSD
 Water

↳ 2 = 1 ERB + 1 TRIP

CALIBRATION

Initial: ok

Continuing: ok

Correlation

COEFFICIENT: -half are low - all associated concentrations should
be estimated

BLANKS

Method: nothing found

Field: no detects

FIELD DUPLICATES: possible -002 + -003 1 hit in one - ND in other

SURROGATES: low 35% R + 52% R high 188% R + 206% R

MS/MSD: _____

INTERNAL STANDARDS: _____

TUNING: _____

OTHER: They re-ran the high surrogates with similar results +
didn't re-run the low surrogates because there would still

SUMMARY: be an interference problem.

Flag non-detects UT because of low correlation coefficients

and low surrogate recoveries.

DATA VALIDATION

CASE: 29017 SITE: 2 ANALYSIS: VOA

LAB NOTES: -006, -011, -016 were diluted (16 is a trip blank)

MeCl + Acetone + TCE in method blank

MS/MSD: TCE out, diluted sample run for spike but not for duplicate

HOLDING TIMES: Analysis 3/20 - Sampling 3/6 - OK

NUMBER OF SAMPLES: Soil 14 Water 2
init. for soils given are all for medium level - none given for low level soil

ALL CALIBRATIONS
Initial: Chloromethane (med soil) 41.8% RSD MeCl 30.7
Acetone 31.6% MEK 0.041 RRF

Continuing: med soil Chloromethane 33.5% D, MEK 0.038 RRFSD
CS₂ - 30.4% D

COEFFICIENT: Low soil - see attached

BLANKS

Method: see attached

Field: ERB: Acetone 36; MeCl 4; TCE 1; TRAVEL: CS₂ 1800; MeCl 70

FIELD DUPLICATES: -013 + -014; -003 + -004 - good to fairly good match

SURROGATES: OK

MS/MSD: OK - 1 out but OK

INTERNAL STANDARDS: OK TUNING: OK

OTHER: There were a number of TICs in both medium + low soil samples - examples are attached

SUMMARY:

DATA VALIDATION

CASE: 29017 SITE: 2 ANALYSIS: SVOC

LAB NOTES: -1 was diluted blank contain was acceptable
ms/msd^{not} within limits % R P.d5 " "

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil 14 Water 1

CALIBRATION
 Initial: OK

Continuing: Benzoic Acid ^{3/10} -99.9, ^{3/26} -91.8, ^{3/26} 92.5 Benzoic ^{3/26} 32.8
Hexachlorocyclopentadiene ^{3/26} 53.7, ^{3/26} 39.6 2,4-dinitrophenol ^{3/26} 33.7

COEFFICIENT: 3-Nitroaniline ^{3/26} 40.5 4-Nitroaniline ^{3/26} 47.1 [no Hits, no flag]

BLANKS
 Method: BEHP. 66 + 73 in soil blank [B removed from all over 800]
 Field: BEHP. 5

FIELD DUPLICATES: good matches

SURROGATES: Phenol-d5 - high %R in 4 of 6 samples - I did not flag
 MS/MSD: because it was all for a single surrogate, but you may wish to.

INTERNAL STANDARDS: ok TUNING: ok

OTHER: _____

SUMMARY: Lots of TICs - some examples attached

CHM HILL TELEPHONE CONVERSATION RECORD

CALL TO _____

PHONE NO. _____

DATE _____

CALL FROM _____

TIME _____ ☐ AM ☐ PM

MESSAGE TAKEN BY _____

PROJECT NO. _____

SUBJECT _____

Lab Sample	Sample #s	N-nitrosodip.	di-n-butyl-p	BBHP
WB1	-15, m15, D15	3	2	4

ω 2 - - - 4

66 - - - 9-1-5

52 -10 - -14 + 14 + 4 ms/msD 73

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

05BS-8-10

Lab Name: CH2M HILL/LRD Contract: S29017

Lab Code: Case No.: S29017 SAS No.: SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 29017009

Sample wt/vol: (g/mL) G Lab File ID: 91M1BN1859

Level: (low/med) LOW Date Received: 03/07/91

% Moisture: not dec. 21 dec. Date Extracted: 03/11/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.90	59000	J
2. 095-47-6	BENZENE, 1,2-DIMETHYL-	7.33	3400	J
3. 13475-81-5	HEXANE, 2,2,3,3-TETRAMETHYL-	7.92	6000	J
4. 62016-34-6	OCTANE, 2,3,7-TRIMETHYL-	8.59	7600	J
5. 52896-87-4	HEPTANE, 4-(1-METHYLETHYL)-	8.74	3700	J
6.	UNKNOWN	9.00	3700	J
7. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	9.17	12000	J
8.	UNKNOWN	9.29	5000	J
9. 124-18-5	DECANE	9.84	20000	J
10. 17302-28-2	NONANE, 2,6-DIMETHYL-	10.25	5300	J
11. 108-67-8	BENZENE, 1,3,5-TRIMETHYL-	10.34	4200	J
12.	UNKNOWN	10.47	6200	J
13. 1074-55-1	BENZENE, 1-METHYL-4-PROPYL-	10.82	4300	J
14.	UNKNOWN	10.95	8800	J
15. 62016-37-9	OCTANE, 2,4,6-TRIMETHYL-	11.57	10000	J
16. 767-99-7	BENZENE, (1-METHYL-1-PROPENY	12.55	2900	J
17. 30571-71-2	DECANE, 3-BROMO-	12.74	2000	J
18. 2801-84-5	DECANE, 2,4-DIMETHYL-	14.74	4300	J
19. 31295-56-4	DODECANE, 2,6,11-TRIMETHYL-	16.15	2900	J
20. 74645-98-0	DODECANE, 2,7,10-TRIMETHYL-	17.52	1600	J

000344

RL

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

04BS-14-16D

Lab Name: CH2M HILL/LRD Contract: S29017

Lab Code: _____ Case No.: S29017 SAS No.: _____ SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 29017004

Sample wt/vol: _____ (g/mL) G Lab File ID: 91M1BN1854

Level: (low/med) LOW Date Received: 03/07/91

% Moisture: not dec. 21 dec. _____ Date Extracted: 03/11/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 075-91-2	HYDROPEROXIDE, 1,1-DIMETHYLE	6.88	56000	BJ
2. 095-47-6	BENZENE, 1,2-DIMETHYL-	7.30	1100	J
3. 13475-81-5	HEXANE, 2,2,3,3-TETRAMETHYL-	7.90	1200	J
4. 5911-04-6	NONANE, 3-METHYL-	8.57	1900	J
5. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	9.15	3100	J
6. 526-73-8	BENZENE, 1,2,3-TRIMETHYL-	9.27	1400	J
7. 124-18-5	DECANE	9.80	6100	J
8. 17302-28-2	NONANE, 2,6-DIMETHYL-	10.22	2100	J
9.	UNKNOWN	10.32	1700	J
10.	UNKNOWN	10.44	2700	J
11. 1074-55-1	BENZENE, 1-METHYL-4-PROPYL-	10.80	2400	J
12.	UNKNOWN	10.94	3200	J
13. 13151-34-3	DECANE, 3-METHYL-	11.07	1300	J
14. 17301-32-5	UNDECANE, 4,7-DIMETHYL-	11.57	5200	J
15.	UNKNOWN	12.55	1100	J
16. 62016-34-6	OCTANE, 2,3,7-TRIMETHYL-	14.30	860	J
17. 17301-30-3	UNDECANE, 3,8-DIMETHYL-	14.72	1800	J
18. 7289-40-9	ETHER, HEPTYL HEXYL	16.14	900	J
19. 057-10-3	HEXADECANOIC ACID	22.92	1200	BJ
20. 103-23-1	HEXANEDIOIC ACID, BIS(2-ETHY	27.42	990	J

000316

BE

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

04BS-14-16

Lab Name: CH2M HILL/LRD Contract: S29017

Lab Code: Case No.: S29017 SAS No.: SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 29017003

Sample wt/vol: (g/mL) G Lab File ID: 91M1BN1853

Level: (low/med) LOW Date Received: 03/07/91

% Moisture: not dec. 23 dec. Date Extracted: 03/11/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 075-91-2	HYDROPEROXIDE, 1,1-DIMETHYLE	6.87	60000	BJ
2. 13475-81-5	HEXANE, 2,2,3,3-TETRAMETHYL-	7.88	1200	J
3. 5911-04-6	NONANE, 3-METHYL-	8.57	1700	J
4.	UNKNOWN	9.14	2800	J
5.	UNKNOWN	9.27	1200	J
6. 124-18-5	DECANE	9.82	5700	J
7. 17302-28-2	NONANE, 2,6-DIMETHYL-	10.22	1800	J
8. 095-63-6	BENZENE, 1,2,4-TRIMETHYL-	10.30	1300	J
9. 7058-01-7	CYCLOHEXANE, (1-METHYLPROPYL	10.45	1200	J
10. 17302-32-8	NONANE, 3,7-DIMETHYL-	10.52	1100	J
11. 6975-98-0	DECANE, 2-METHYL-	10.95	5000	J
12. 13151-34-3	DECANE, 3-METHYL-	11.07	1200	J
13. 933-98-2	BENZENE, 1-ETHYL-2,3-DIMETHY	11.25	1000	J
14. 62016-37-9	OCTANE, 2,4,6-TRIMETHYL-	11.57	5100	J
15. 4292-92-6	CYCLOHEXANE, PENTYL-	12.22	700	J
16.	UNKNOWN	12.60	1200	J
17. 62016-34-6	OCTANE, 2,3,7-TRIMETHYL-	14.30	860	J
18. 62016-37-9	OCTANE, 2,4,6-TRIMETHYL-	14.70	1400	J
19. 62016-37-9	OCTANE, 2,4,6-TRIMETHYL-	16.14	880	J
20. 057-10-3	HEXADECANOIC ACID	22.92	1200	BJ

000308

BC

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

04BS-6-8

Lab Name: CH2M HILL/LRD Contract: S29017

Lab Code: _____ Case No.: S29017 SAS No.: _____ SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 29017002

Sample wt/vol: _____ (g/mL) G Lab File ID: 91M1BN1852

Level: (low/med) LOW Date Received: 03/07/91

% Moisture: not dec. 20 dec. _____ Date Extracted: 03/11/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-79-7	3-PENTEN-2-ONE, 4-METHYL-	5.72	480	BJ
2. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	6.22	370	BJ
3. 075-91-2	HYDROPEROXIDE, 1,1-DIMETHYLE	6.87	53000	BJ
4.	UNKNOWN	8.25	550	J
5. 871-83-0	NONANE, 2-METHYL-	9.15	350	J
6. 124-18-5	DECANE	9.82	1000	J
7. 13475-78-0	HEPTANE, 5-ETHYL-2-METHYL-	10.22	360	J
8. 6975-98-0	DECANE, 2-METHYL-	10.95	930	J
9. 871-83-0	NONANE, 2-METHYL-	11.57	1200	J
10.	UNKNOWN	11.94	290	J
11. 62183-55-5	OCTANE, 3-ETHYL-2,7-DIMETHYL	12.62	270	J
12. 62016-34-6	OCTANE, 2,3,7-TRIMETHYL-	14.32	340	J
13. 17301-30-3	UNDECANE, 3,8-DIMETHYL-	14.72	580	J
14. 7289-40-9	ETHER, HEPTYL HEXYL	16.15	350	J
15. 62238-13-5	DECANE, 2,3,7-TRIMETHYL-	17.00	200	J
16. 62016-37-9	OCTANE, 2,4,6-TRIMETHYL-	17.50	200	J
17. 057-10-3	HEXADECANOIC ACID	22.92	550	BJ
18.	UNKNOWN	24.95	230	J
19. 4337-65-9	HEXANEDIOIC ACID, MONO(2-ETH	27.39	1000	J
20. 21078-65-9	1-DECANOL, 2-ETHYL-	28.36	410	J

000300

24

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

04BS-0-2

Lab Name: CH2M HILL/LRD Contract: S29017

Lab Code: Case No.: S29017 SAS No.: SDG No.: GC-MS

Matrix: (soil/water) SOIL Lab Sample ID: 29017001

Sample wt/vol: (g/mL) G Lab File ID: 91M1BN1851

Level: (low/med) LOW Date Received: 03/07/91

% Moisture: not dec. 22 dec. Date Extracted: 03/11/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/29/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 075-91-2	HYDROPEROXIDE, 1,1-DIMETHYLE	6.92	58000	BJ
2. 13475-81-5	HEXANE, 2,2,3,3-TETRAMETHYL-	7.97	27000	J
3. 5911-04-6	NONANE, 3-METHYL-	8.64	39000	J
4.	UNKNOWN	9.05	21000	J
5. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	9.24	46000	J
6. 095-63-6	BENZENE, 1,2,4-TRIMETHYL-	9.87	39000	J
7. 124-18-5	DECANE	9.94	37000	J
8. 13475-78-0	HEPTANE, 5-ETHYL-2-METHYL-	10.34	32000	J
9.	UNKNOWN	10.54	40000	J
10. 535-77-3	BENZENE, 1-METHYL-3-(1-METHY	10.99	94000	J
11.	UNKNOWN	11.17	23000	J
12. 098-06-6	BENZENE, (1,1-DIMETHYLETHYL)	11.37	22000	J
13. 1072-05-5	HEPTANE, 2,6-DIMETHYL-	11.70	36000	J
14. 62108-23-0	DECANE, 2,5,6-TRIMETHYL-	12.54	15000	J
15.	UNKNOWN	12.64	30000	J
16. 1002-43-3	UNDECANE, 3-METHYL-	12.82	16000	J
17. 6975-98-0	DECANE, 2-METHYL-	13.32	27000	J
18. 6975-98-0	DECANE, 2-METHYL-	14.79	19000	J
19. 17301-30-3	UNDECANE, 3,8-DIMETHYL-	16.20	13000	J
20.	UNKNOWN	32.46	23000	J

000276

DATA VALIDATION

CASE: 29017 SITE: 2 ANALYSIS: INORG

LAB NOTES: Pre-digestion spike out for Sb, Cr, Se but acceptable post-d.

90% Cr dup. out Se used MSA

HOLDING TIMES: Date Prepped 3/19 and 3/13 5 samples 3/6 = OK

NUMBER OF SAMPLES: Soil 5 Water 1

CALIBRATION

Initial: water = OK S = OK

Continuing: water OK S = OK

COEFFICIENT: _____

BLANKS

Method: Soil Ag - 0.205 Se 0.162 Water 5.9 Zn

Field: Zn 2.68 (x5 = 13) All conc. found in samples were higher.
no flags

FIELD DUPLICATES: _____

SURROGATES: _____

MS/MSD: _____

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: Pre- + Post- dig spike both low for Se - I for the hits, but
I also gave the one non-hit a U which you may not want, as
we are not flagging Organic non-detects.

DATA VALIDATION

CASE: 29032 SITE: QC ANALYSIS: VOA

LAB NOTES: ^①-003 diluted - CS₂ problem → from inadequate water purification system

^②Blank contain: Aceton, MeCl + TCE

^③Surrogates - 2 out but acceptable ^④ms/msd with 29017-015

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil _____ Water 3 = 2 FB + 1 Trip B

CALIBRATION

Initial: OK

Continuing: Acetone 34.3 % D no other hits effected

" not present in associated sample - no action

COEFFICIENT: NA

^②MeCl 6 TCE 1

BLANKS

Method: ^{all}① MeCl 8; Acetone 10 ③ MeCl 12, Acetone 8 ④ MeCl 8 Ace 7

Field: both are blanks

FIELD DUPLICATES: none

SURROGATES: -003 (Travel Blank) high - all positive results = J

MS/MSD: OK

INTERNAL STANDARDS: OK TUNING: OK

OTHER: _____

SUMMARY: _____

DATA VALIDATION

CASE: 29032 SITE: QC ANALYSIS: SVOC

LAB NOTES: ① N-nitrosodiphenylamine in blank

② -002 - low surr. %R

③ MS/MSD with 29017 -015

HOLDING TIMES: 3/12 (extract.) - 3/7 sampled = OK

NUMBER OF SAMPLES: Soil - Water 2 - both field blanks

CALIBRATION

Initial: OK

Continuing: Benzoic acid 0.029 RF50, 70.1 %D

Nitroaniline 35.8 %D - no hits, no flags

COEFFICIENT: NA

BLANKS

Method: n-Nitrosodiphenylamine 2 - not in samples

Field: both contain BEHP

FIELD DUPLICATES: none

→ SURROGATES: Phenol-d5 - 4%R - all positives in sample 2 flagged J
SOX + HAZWRAP says non-detects should be rejected, but limits
MS/MSB are 10-94 - I didn't reject because you didn't in your report,
and because we don't list all the compounds.

INTERNAL STANDARDS: OK TUNING: OK

OTHER: alkyl groups in TICs 4%R - all positives flagged J

SUMMARY: _____

DATA VALIDATION

CASE: 29032 SITE: QC ANALYSIS: INORG

LAB NOTES: —

HOLDING TIMES: 3/19-13 — 3/7 sampling = OK
prep

NUMBER OF SAMPLES: Soil — Water 2

CALIBRATION

Initial: OK

Continuing: OK

Correlation
COEFFICIENT: Not found

BLANKS

Method: Ag -1.2 ; Zn 5.9

Field: Both samples are field blanks; both contain Pb + Zn

FIELD DUPLICATES: none

SURROGATES: —

MS/MSD: —

INTERNAL STANDARDS: — TUNING: —

OTHER: —

SUMMARY: —

DATA VALIDATION

CASE: 29032 SITE: 4 ANALYSIS: BTEX

LAB NOTES: ms/msd w/ 28998-2

HOLDING TIMES: 3/21 analysis date - 3/09 sampling date = 14 days

NUMBER OF SAMPLES: Soil - Water 6 * (2 missing?)

CALIBRATION

Initial: ok

Continuing: _____

COEFFICIENT: NA

BLANKS

Method: nothing found

Field: not analyzed

FIELD DUPLICATES: not requested

SURROGATES: ok high for samples 133-143; ok for 602/8020-96-113

MS/MSD: _____

INTERNAL STANDARDS: _____

Control Charts: ok
TUNING: _____

* OTHER: C of C and Field Inventory list ERB-06-37 and P7BW
as samples (note: see ref #) but no mention of these by lab

SUMMARY: no detects

DATA VALIDATION

CASE: 29032 SITE: 4 ANALYSIS: PNA

LAB NOTES: control charts incomplete

coelution between indeno (1,2,3-cd) pyrene and dibenzo (a,h) anthracene

HOLDING TIMES: 3/13 extraction date - 3/7 = 6 days

NUMBER OF SAMPLES: Soil — Water 7

CALIBRATION

Initial: high RSD in the methyl naphthalenes (41.4 + 38.8) in confirm. column only

Continuing: 37.3% RSD for indeno/dibenzo (coeluting. see above lab notes)

COEFFICIENT: —

BLANKS

Method: nothing found

Field: samples 9 + 10 Not analyzed

FIELD DUPLICATES: samples 9 + 10

SURROGATES: low for deca 48-59 % R; low to ok for Terp 62-130

MS/MSD: range is 70 - 130; duplicate range 64-118 61-94

INTERNAL STANDARDS: — TUNING: —

OTHER: —

SUMMARY: nothing found in any samples, so I'm worried about the low surrogate recoveries (can't find acceptable limits in the Fed Register for 610

POLYNUCLEAR AROMATIC HYDROCARBONS
SURROGATE RECOVERY

Primary Analysis Instrument ID: GC 3700

	Date	Laboratory Reference No.	EPA-610 Surrogate Recovery	EPA-610 Surrogate Recovery
			Decafluorobiphenyl	Terphenyl-d14
01	04-04-91	Method Blank	83	60
02	03-27-91	29032 - 4	49	111
03	03-27-91	29032 - 5	48	119
02	03-27-91	29032 - 6	54	130
03	03-27-91	29032 - 7	57	117
04	03-27-91	29032 - 8	48	121
05	03-27-91	29032 - 9	53	129
06	03-27-91	29032 - 10	58	124
07	03-27-91	29032 - M10	59	62
08	03-27-91	29032 - D10	56	66

EPA-610 Surrogate standards reported as percent recovery.

NA = Not Analyzed.

Comments:

Approved By: *Greg Jork*

kdh.1

000163

DATA VALIDATION

CASE: 29041 SITE: 1 ANALYSIS: BTEX

LAB NOTES: The soil sample at 5X dilution - interference with IS
MS/MSD is acceptable - not included in package

HOLDING TIMES: ^{Analysis} 3/14 - 3/7 = 7 days

NUMBER OF SAMPLES: Soil 1 Water 1 = ERB

CALIBRATION

Initial: ok

Continuing: ok

COEFFICIENT: not included

BLANKS

Method: Chan 112% succ. R

Field: nothing found

FIELD DUPLICATES: none

SURROGATES: ok

MS/MSD: Not available

INTERNAL STANDARDS: _____ TUNING: control chart ok

OTHER: _____

SUMMARY: _____

DATA VALIDATION

CASE: 29041 SITE: 1 ANALYSIS: PNA

LAB NOTES: discrepancy between 1ST run (130 ug/L) and confirmation run (9 ug/L) for 1-methyl naphthalene - matrix interference

HOLDING TIMES: _____

NUMBER OF SAMPLES: Soil 1 Water 1

CALIBRATION

Initial: 30.18% RSD for benzo (ghi) perylene

I can't tell if IC n CC is for the water or the soil sample

Continuing: _____

COEFFICIENT: _____

BLANKS

Method: nothing found

Field: ERB - no hits but surrogate recoveries just above limits (49 and 53)

FIELD DUPLICATES: _____

SURROGATES: %R for method blank below 43-116 limits = 41

MS/MSD: _____

INTERNAL STANDARDS: _____ TUNING: Control chart - ok

OTHER: see notes - I gave the 130 a J

SUMMARY: _____

DATA VALIDATION

CASE: 29046 SITE: 4 ANALYSIS: BTEX

LAB NOTES: IS low Surrogates - high MS/MSD w/ this package

HOLDING TIMES: 3/21 analysis - 3/8 sampled = 13 days

NUMBER OF SAMPLES: Soil 6 Water 2 = 1 ERB + 1 THP

CALIBRATION

Initial: date given = 2/21

3/15 for standards - ok

Continuing: ok

COEFFICIENT: date given = 4/9/91 - not ok
4/1/91 - all ok for that date

BLANKS

Method: no hits

Field: no hits

FIELD DUPLICATES: no hits

SURROGATES: Lowest surrogate recovery = 112%^R (see attached) - up to 285% R

MS/MSD: Benzene 182% R dup 265% R
Toluene 123 167

INTERNAL STANDARDS: _____ TUNING: _____

OTHER: _____

SUMMARY: nothing found in samples despite high surrogate + MS recoveries



Engineers
Planners
Economists
Scientists

VOLATILES SURROGATE RECOVERY

Primary Analysis Instrument ID: VAR 3600

			EPA-8020 & 602 BTEX Surrogate Recovery Fluorobenzene
Date	Laboratory Reference No.		
01 03-20-91	Method Blank		128
02 03-21-91	Method Blank		126
03 03-21-91	29046 - 1		151
04 03-21-91	29046 - 2		125
05 03-21-91	29046 - 3		112
06 03-21-91	29046 - 4		285*
06 03-21-91	29046 - 4RE		279*
07 03-21-91	29046 - 5		130
08 03-21-91	29046 - 6		131
09 03-22-91	29046 - M04		177*
10 03-22-91	29046 - D04		232*

Surrogate Standard	Acceptance Range	
	Water	Soil
Fluorobenzene	60 - 132	53 - 152

EPA-8080 & 602 Surrogate standards reported as percent recovery.

NA = Not Analyzed.

Comments: * Outside calibration range.

Approved By: Greg Jordan

kdh.H

000028

DATA VALIDATION

CASE: 29046 SITE: 4 ANALYSIS: PAH

LAB NOTES: indeno (1,2,3-cd) ^{pyrene} coelutes w/ dibenz (a,h) anthracene

HOLDING TIMES: 3/13 ext - 3/7 samp. = ok

NUMBER OF SAMPLES: Soil 3 Water 1

CALIBRATION

Initial: benzo (g,h,i) perylene 30.18 %RSD (confirm = 7 %RSD)

REF ok

Continuing: benzo (g,h,i) perylene - 40.6 %D (confirm 32.6 %D)

COEFFICIENT: not given

BLANKS

Method: no hits

Field: no hits

FIELD DUPLICATES: not requested

SURROGATES: _____

MS/MSD: not requested

INTERNAL STANDARDS: _____

OTHER: _____

Surrogate Control Charts

TUNING: No control charts yet for soils

Those for water have extremely wide limits = -5 to 125 (%)

SUMMARY: no hits in samples

Appendix G
SAMPLING REPORT FROM THE
ALABAMA HIGHWAY DEPARTMENT



STATE OF ALABAMA
HIGHWAY DEPARTMENT

MONTGOMERY, ALABAMA 36130

GUY HUNT
GOVERNOR

ROYCE G. KING
HIGHWAY DIRECTOR

December 11, 1990

Mr. Gary Hinkle, Chief
Installation Restoration Programs Branch
Environmental Division
National Guard Bureau
Andrews Air Force Base, D.C. 20331-60080

Re: Project No. 51-006-003-008-901
US 80/Montgomery, AL

Dear Mr. Hinkle:

As you may recall, we wrote you on May 24, 1990, (copy attached) regarding highway construction activities along US 80 which is located adjacent to Dannelly Field ANGB. Enclosed you will find a copy of information generated as a result of our sampling activities. As you will note, we did not find that a major problem existed in this area with the exception that it appeared to us that the underground fuel storage next to the AASF hangar was leaking into the adjacent creek.

Per our May 24th letter, I am enclosing a copy of an invoice recently received from the ADEM Lab for sample analysis. Remittance for these costs should be submitted to the Alabama Highway Department at the above referenced address. Please reference the above project number and submit to my attention.

The invoices are misleading in that the total per sample is not in dollars as indicated, but is work time units. To convert these charges to dollars multiply these charges by 1.19. The total work time units is 4,732 which equates to \$5,631.08.

Should you have questions, please feel free to contact this Office.

Yours very truly,

Larry Lockett

Larry Lockett
Materials and Tests Engineer

BEC:s1
Attachment (3)

cc: File





GUY HUNT
GOVERNOR

STATE OF ALABAMA HIGHWAY DEPARTMENT

MONTGOMERY, ALABAMA 36130

May 24, 1990

ROYCE G. KING
HIGHWAY DIRECTOR

Mr. Gary Hinkle, Chief
Installation Restoration Programs Branch
Environmental Division
National Guard Bureau
Andrews Air Force Base, D.C. 20331-6008

Dear Mr. Hinkle:

This letter is to confirm a telephone conversation of Monday, May 21, between Mr. David Hippensteel of your staff and Mr. B. E. Cox, a member of my staff. The topic discussed was potentially contaminated state right-of-way located along US 80 which is adjacent to Dannelly Field, Montgomery, Alabama.

During past operations it appears that various compounds may have drained from both the Air Guard and Army Guard Bases on Dannelly to State property. In order to determine if any contamination exist on State property from these facilities, sampling will be conducted in accordance with contract No. DE-AC05-840R21400 for sites 3 and 5. Additional sampling will be conducted along the perimeter fence in the vicinity of sites 3 and 5 where disposal may have occurred. The above referenced sites are associated with the Air Guard Facility.

In order to ensure that past operational and disposal practices by the Army Guard have not impacted State property, additional sampling will be conducted along the perimeter fence. Also, each major drainage ditch serving the Army Guard will be sampled.

As explained to Mr. Hippensteel it is imperative that this work be accomplished as soon as possible in order to prevent safety problems associated with highway construction in the area. Therefore, this Division will sample these areas in the near future. It is my understanding that NGB will reimburse the State for the cost of this work. Sample results will be forwarded to NGB for review. Should this sampling indicate an environmental problem, then further coordination relative to corrective action will be required.

Should you have questions, please feel free to contact this Office.

Yours very truly,

Larry Cockett

Larry Cockett
Materials and Tests Engineer

BEC:s1

CC: Mr. Wm. J. Hartzog
Mr. Mitch Kilpatrick

106B



STATE OF ALABAMA HIGHWAY DEPARTMENT

MONTGOMERY, ALABAMA 36130

GUY HUNT
GOVERNOR

MEMORANDUM

ROYCE G. KING
HIGHWAY DIRECTOR

DATE: July 9, 1990

TO: Larry Lockett
Materials & Test Engineer

FROM: Bernard E. Cox, Jr. *BEC*
Environmental Engineer

SUBJECT: Project: 51-006-003-008-901
US 80 At Dannelly Field

On Friday, May 25, 1990, the writer collected 19 samples (soil and surface water), on right-of-way adjacent to Dannelly Field. The samples were collected to determine if past disposal practices by Army and Air Guard units at Dannelly had resulted in the creation of hazardous material sites on AHD ROW. This issue was raised by National Guard Bureau (NGB) in a letter to AHD dated May 3, 1990. In this letter NGB indicated that AHD would become responsible for any required remedial action should construction activities commence on potential sites.

Follow-up phone conversation and correspondence with NGB resulted in their agreeing to pay for sampling cost along the Dannelly-AHD ROW. Additionally, NGB was informed and now agrees that should remedial action be required, they (NGB) would be responsible for paying corrective action cost.

The writer was met at the sampling site by Johnny Day, project manager, for AHD. Sampling began at the west end of the area in question, on the west-side of Ft. Rufus Shepard. Four samples were collected between Station 423+48 and 420+85. No unusual traits were noted in this area. All soil samples were composed of numerous grab samples each 0 to 12 inches deep. These samples were composited in a metal pan lined with aluminum foil. Sampling spades were decontaminated with distilled water between sampling events.

Sampling progressed from Station 420+63 to Station 411+79. Seven samples were collected in this area. A noticeable kerosene odor was detected in the stream adjacent to the AASF hangar. Sample 2-3-4 was a water sample taken approximately 10 feet from the Guard frontage road in the drainage ditch. Samples 2-5-1 and 2-6-3/5 were also collected from this drainage course. Guard personnel informed the writer that a JP-4 UST located next to the drainage course had been emptied the morning of the 25th.

Sampling continued eastwardly from Station 411+59 to Station 401+60. Four samples were collected in this area with no unusual circumstances encountered. A composite sample from Station 411+59 to Station 404+91 was collected as was a composite sample from Sta. 404+61 to Sta. 404+60. Discreet samples were collected in the creek between Stations 401+60 and 401+42.

Mr. Larry Lockett
July 9, 1990
Page 2

Sampling progressed from Station 401+42 to Station 390+06, the east end point of the sampling area. Four samples were taken in this area with 4-1-1/3/5 being a composite sample along the old fence line. Three discreet samples were collected in the ditch outfall on the east end of the sampling zone.

The following numbering system for the samples was developed:

A-B-C/D/E.

A - Position signifies west to east with 1 on west end and 4 on the east end.

B- Sequential number, from 1 to 7.

C/D/E - Position number with following values - (1- TPH); (2-BTEX-Soil); (3-Base Neutrals); (4-BTEX-Water); (5-Lead).

Sampling Protocol- Three types of samples were collected during the sampling Phase. These were composite soil, composite sludge and water. Composite soil samples were taken along the old fence line which is presently being moved by AHD contractors. Samples of this type were collected by taking a discreet sample every 10 to 15 feet along the fence and compositing by mixing in a lined pan. These samples were normally taken from 0 to 12 inches using aluminum scoops which were decontaminated with distilled water between sampling events. Samples collected in this manner were 1-2-1; 1-6-3/5; 2-1-1/3/5; 2-7-1/3/5; 3-1-1/3/5; 3-2-1/3/5; and 4-1-1/3/5.

Composite sludge soil samples were collected from four drainage courses exiting Dannelly onto AHD right-of-way. Either two or three discreet points were consolidated to make one sample. Materials were collected with an aluminum scoop and placed directly into a pint jar. Jars were filled to maximum capacity and sealed using aluminum foil and a screw on cap. Samples 1-3-1; 1-5-2; 2-2-1; 2-4-2; 2-5-1; 2-6-3/5; 3-3-2; 4-3-2; 4-3-3/5; and 4-4-1, were collected in this manner.

Two water samples, 2-3-4 and 3-4-4, were collected for volatile analysis. Volatile bottles secured from the ADEM laboratory were used for collection purposes. Only two of the four drainage courses exiting Dannelly had flow at the time of sampling. Samples were collected by placing bottles in the flow path and filling until no bubbles were left in the bottles. Bottle tops were then placed on the samples which were then checked to insure zero head space.

Samples for TPH analysis were taken to the AHD Environmental Lab and relinquished by the writer to Pat McCartha. Chain of custody was maintained and relinquished as required. All other samples were taken to the ADEM Lab and relinquished using appropriate chain of custody.

Sample results were received over a period of time from June 8 through July 1, 1990. Copies of the sample results are attached for your review. The following is a summary of the attached results:

June 5, 1990 - BTEX-ADEM Lab - Only sample 2-3-4 showed any volatile compounds. This sample showed 469.7 PPB of 1-1-1- Trichlorethane. This

Mr. Larry Lockett
July 9, 1990
Page 3

sample was the water sample in the creek next to the AASF where kerosene was noted at the time of sampling. The completed BTEX-Volatile sampling was forwarded June 8, 1990, from ADEM to this Office. Only sample 2-4-2, a composite soil sample in the same creek, showed any compounds. This sample showed .19 ug/l of 1,1,1, - Trichloroethane.

June 8, 1990 - TPH results -AHD Lab - Eight samples were analyzed for TPH with all eight showing some signs of TPH. This was to be expected since the samples were taken along the fence line bordering a major highway where diesel fuel and other fuels had been used by the Guard for weed control. The highest TPH value (575 ppm) was a composite sample taken between Stations 413+90 and 411+79. This is the fence line immediately in front of the AASF Hangar. The next highest reading was found at Station 390+83. This sample was collected next to a sorbent boom in the drainage ditch on Guard property.

June 19/26, 1990 - Base Neutrals; Lead; EPTOX Metals - No regulated EPT metals (including lead) were found in any samples. All total lead levels were low and consistent with normal soil conditions. No base neutrals were observed in any samples other than 4-4-3/5. Low levels (PPB) of various base neutral compounds were found in this sample which was collected in the drainage ditch on the east end of the project.

Conclusions - Diesel fuel was known to be used as a weed killer by Guard personnel along the fence line so finding TPH in this area was expected. No base neutrals, metals or volatiles were found in these samples. Thus, none of this area would constitute a hazardous waste or other regulated site. It should be noted that TPH is an indicator only and has regulatory value only when used in conjunction with an UST.

Only two questionable areas were noted and they are both drainage ditches exiting Guard property onto AHD ROW. These areas are adjacent to UST operated by Guard units. TPH and some indicators parameters, at very low levels, were found in two samples. Neither site should impact AHD construction activities.

Recommendations - Sampling results should be forwarded to NGB. Construction activities should continue as no regulated sites were noted on AHD ROW.

BEC:s1

cc: Mr. Mitch Kilpatrick
File

ARMSTRONG
UGB



GUY HUNT
GOVERNOR

STATE OF ALABAMA HIGHWAY DEPARTMENT

MONTGOMERY, ALABAMA 36130

June 8, 1990

ROYCE G. KING
HIGHWAY DIRECTOR

MEMORANDUM

TO: Mr. Stanley R. Armstrong
Assistant Materials & Tests Engineer

FROM: Pat McCartha

RE: Test results for Petroleum Hydrocarbon
Contamination; Project 51-006-003-901 Montgomery
county

Attached are test results for samples taken from various locations at the referenced site. Copies are being sent to the Division for their information.

wpm
cc: Division
Mr. Bill Holmes
File

B

LAB NO... SEE BELOW

ALABAMA HIGHWAY DEPARTMENT

BMT-16 Rev.

COPIES TO. Chemical Lab

PROJECT NO(S). 51-006-003-901

COUNTY..... Montgomery

DIVISION..... 6

DATE..... June 8, 1990

REPORT OF) INSPECTION
) ANALYSIS ON SAMPLE OF.. Soil for Total Petroleum Hydrocarbon

SOURCE OF MATERIAL..... See Station & Offset

SAMPLED BY / DATE..... B. Cox; 5/25/90

SUBMITTED BY / DATE..... B. Cox; 05/25/90

Received By/ Date..... Strickland; 05/25/90

Tested By/ Date..... D. Hicks; 06/06/90

ADEM Reference No.....

REMARKS.....

TEST RESULTS

LAB NO.	MARKS	MATERIAL	TOTAL PETROLEUM HYDROCARBON
3q1-1918	1-2-1	Soil	24
3q1-1919	2-1-1	Soil	77
3q1-1920	2-5-1 ✓	Soil	159
3q1-1921	2-7-1 ✓	Soil	575
3q1-1922	3-1-1 ✓	Soil	207
3q1-1923	3-2-1	Soil	82
3q1-1924	4-1-1	Soil	44
3q1-1925	4-4-1 ✓	Soil	456

Total Petroleum Hydrocarbon results in mg/kg on a dry weight basis

wpm

E. L. McCutchin
TESTING ENGINEER

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



Guy Hunt
Governor

Leigh Pegues, Director

1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36130
205/271-7700

June 26, 1990

M E M O R A N D U M

Field Offices:

Unit 806, Building 8
225 Oxmoor Circle
Birmingham, AL
35209
205/942-6168

P.O. Box 953
Decatur, AL
35602
205/353-1713

2204 Perimeter Road
Mobile, AL
36615
205/479-2336

TO: Buddy Cox
Highway Department

FROM: John Chitwood *JCC*

SUBJECT: Laboratory Results

Attached are laboratory results from samples submitted to the ADEM Central Laboratory for analysis by the Highway Department.

JC/mpt

Attachments

- SAMPLE ANALYSIS REPORT -
06/22/90

To: ALABAMA HIGHWAY DEPARTMENT

△
JUL 1 1990
RECEIVED
FBI
LAB

Attn: BUDDY COX

Lab number : 0105303 ✓
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/22/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 9:30 COX
Location : DANNELLY ANGB, 1-6-3/5

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105303	1,2,4.-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/13/90
	Anthracene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/13/90
	Benzo(a)anthracene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/13/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluocanthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument
detection limit.

detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY:

☒ Montgomery

☐ Mobile

☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☒ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB US80

Location B-6-3/5-

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	Base Neutrals	_____
NO ₂ -N	_____	TS	_____	Hg	_____	head (Tot & EPT)	_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. Cox B. E. C. 9:30 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. Cox B. E. C. 2:00 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105303

SEND REPORT TO: Cox (Highway Mat & Test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/01/90

To: ALABAMA HIGHWAY DEPARTMENT

JUN 1990
RECEIVED
ADEM
Field Office
Mobile

Attn: BUDDY COX

Lab number : 0105307
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/01/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 9:10 COX
Location : DANNELLY ANGB US80, 1-5-2

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 1, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105307	1,1,1,2-Tetrachloroetha	0.0500	ug/g	U	05/31/90
	1,1,1-Trichloroethane	0.0500	ug/g	U	05/31/90
	1,1,2,2-Tetrachloroetha	0.0500	ug/g	U	05/31/90
	1,1,2Trichloroethane	0.0500	ug/g	U	05/31/90
	1,1-Dichloroethane	0.0500	ug/g	U	05/31/90
	1,1-Dichloroethylene	0.0500	ug/g	U	05/31/90
	1,1-Dichloropropene	0.0500	ug/g	U	05/31/90
	1,2,3-Trichlorobenzene	0.0500	ug/g	U	05/31/90
	1,2,3-Trichloropropane	0.0500	ug/g	U	05/31/90
	1,2,4-Trichlorobenzene	0.0500	ug/g	U	05/31/90
	1,2,4-Trimethylbenzene	0.0500	ug/g	U	05/31/90
	1,2-Dichloroethane	0.0500	ug/g	U	05/31/90
	1,2-Dichloropropane	0.0500	ug/g	U	05/31/90
	1,3,5-Trimethylbenzene	0.0500	ug/g	U	05/31/90
	1,3-Dichloropropane	0.0500	ug/g	U	05/31/90
	1,3-Dichloropropene	0.0500	ug/g	U	05/31/90
	2,2-Dichloropropane	0.0500	ug/g	U	05/31/90
	Tetrachloroethylene	0.0500	ug/g	U	05/31/90
	Bromobenzene	0.0500	ug/g	U	05/31/90
	Bromochloromethane	0.0500	ug/g	U	05/31/90
	Bromodichloromethane	0.0500	ug/g	U	05/31/90
	Benzene	0.0500	ug/g	U	05/31/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 1. 1990

Lab#	Test	Result	Units	DL*	Analdate
0105307	Bromomethane	0.0500	ug/g	U	05/31/90
	cis-1,2-Dichloroethylen	0.0500	ug/g	U	05/31/90
	Chlorobenzene	0.0500	ug/g	U	05/31/90
	Chlorodibromomethane	0.0500	ug/g	U	05/31/90
	Chloroethane	0.0500	ug/g	U	05/31/90
	Bromoform	0.0500	ug/g	U	05/31/90
	Chloroform	0.0500	ug/g	U	05/31/90
	Chloromethane	0.0500	ug/g	U	05/31/90
	Carbon Tetrachloride	0.0500	ug/g	U	05/31/90
	Dibromomethane	0.0500	ug/g	U	05/31/90
	Dichlorofluoromethane	0.0500	ug/g	U	05/31/90
	Dichloromethane	0.0500	ug/g	U	05/31/90
	Ethylbenzene	0.0500	ug/g	U	05/31/90
	Fluorotrichloromethane	0.0500	ug/g	U	05/31/90
	Hexachlorobenzene	0.0500	ug/g	U	05/31/90
	Isopropylbenzene	0.0500	ug/g	U	05/31/90
	m-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	m-Xylene	0.0500	ug/g	U	05/31/90
	Naphthalene	0.0500	ug/g	U	05/31/90
	n-Butylbenzene	0.0500	ug/g	U	05/31/90
	n-Propylbenzene	0.0500	ug/g	U	05/31/90
	o-Chlorotoluene	0.0500	ug/g	U	05/31/90
	o-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	o-Xylene	0.0500	ug/g	U	05/31/90
	p-Chlorotoluene	0.0500	ug/g	U	05/31/90
	p-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	p-Isopropyltoluene	0.0500	ug/g	U	05/31/90
	p-Xylene	0.0500	ug/g	U	05/31/90
	Secbutylbenzene	0.0500	ug/g	U	05/31/90
	Styrene	0.0500	ug/g	U	05/31/90
	t-1,2Dichloroethane	0.0500	ug/g	U	05/31/90
	Tertbutylbenzene	0.0500	ug/g	U	05/31/90
	Trichloroethylene	0.0500	ug/g	U	05/31/90
	Toluene	0.0500	ug/g	U	05/31/90
	Vinyl Chloride	0.0500	ug/g	U	05/31/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery ☐ Mobile ☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☐ Composite ☒
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB 4580

Location 1-5-2

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>STEX (101)</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	_____	_____
O & G	_____	VSS	_____	Mg	_____	_____	_____

F. Coli. _____

B. Cox D. Cox 9:10 5/25/90 B. Cox B. Cox 2:00 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

Deloris Oliver 5/25 2:00 CIC 5307
RECEIVED IN LAB BY (Signature) DATE/TIME LABORATORY I.D. NO.

SEND REPORT TO: Cox (Met + Test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
05/31/90

To: ALABAMA HIGHWAY DEPARTMENT

RECEIVED
Adm
Field Office
Mobi

Attn: BUDDY COX

Lab number : 0105297
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 05/31/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 9:20 COX
Location : DANNELLY ANGB, 1-3-2

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105297	1,1,1,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,1-Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1,2,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,2Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethylene	0.0500	ug/g	U	05/29/90
	1,1-Dichloropropene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichloropropane	0.0500	ug/g	U	05/29/90
	1,2,4-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,4-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,2-Dicholoethane	0.0500	ug/g	U	05/29/90
	1,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3,5-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropene	0.0500	ug/g	U	05/29/90
	2,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	Tetrachloroethylene	0.0500	ug/g	U	05/29/90
	Bromobenzene	0.0500	ug/g	U	05/29/90
	Bromochloromethane	0.0500	ug/g	U	05/29/90
	Bromodichloromethane	0.0500	ug/g	U	05/29/90
	Benzene	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105297	Bromomethane	0.0500	ug/g	U	05/29/90
	cis-1,2-Dichloroethylen	0.0500	ug/g	U	05/29/90
	Chlorobenzene	0.0500	ug/g	U	05/29/90
	Chlorodibromomethane	0.0500	ug/g	U	05/29/90
	Chloroethane	0.0500	ug/g	U	05/29/90
	Bromoform	0.0500	ug/g	U	05/29/90
	Chloroform	0.0500	ug/g	U	05/29/90
	Chloromethane	0.0500	ug/g	U	05/29/90
	Carbon Tetrachloride	0.0500	ug/g	U	05/29/90
	Dibromomethane	0.0500	ug/g	U	05/29/90
	Dichlorofluoromethane	0.0500	ug/g	U	05/29/90
	Dichloromethane	0.0500	ug/g	U	05/29/90
	Ethylbenzene	0.0500	ug/g	U	05/29/90
	Fluorotrichloromethane	0.0500	ug/g	U	05/29/90
	Hexachlorobenzene	0.0500	ug/g	U	05/29/90
	Isopropylbenzene	0.0500	ug/g	U	05/29/90
	m-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	m-Xylene	0.0500	ug/g	U	05/29/90
	Naphthalene	0.0500	ug/g	U	05/29/90
	n-Butylbenzene	0.0500	ug/g	U	05/29/90
	n-Propylbenzene	0.0500	ug/g	U	05/29/90
	o-Chlorotoluene	0.0500	ug/g	U	05/29/90
	o-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	o-Xylene	0.0500	ug/g	U	05/29/90
	p-Chlorotoluene	0.0500	ug/g	U	05/29/90
	p-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	p-Isopropyltoluene	0.0500	ug/g	U	05/29/90
	p-Xylene	0.0500	ug/g	U	05/29/90
	Secbutylbenzene	0.0500	ug/g	U	05/29/90
	Styrene	0.0500	ug/g	U	05/29/90
	t-1,2Dichloroethane	0.0500	ug/g	U	05/29/90
	Tertbutylbenzene	0.0500	ug/g	U	05/29/90
	Trichloroethylene	0.0500	ug/g	U	05/29/90
	Toluene	0.0500	ug/g	U	05/29/90
	Vinyl Chloride	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY:

☒ Montgomery

☐ Mobile

☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☐ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container F
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB US80

Location 1-3-2

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>BTEX-Vol</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	_____	_____
O & G	_____	VSS	_____	Mg	_____	_____	_____

B. Cox 9:20 5/25/70
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. Cox 2:00 5/25/70
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105297

END REPORT TO: Cox (Mat & Test)

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery () Mobile () Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction ☒ Composite
Surface Water [] Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment ☒ Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Dannelly ANGB US80

Location 2-7-3/5

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁻)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	<u>Pb</u>	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>Base Neutrals</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	<u>Pb (Tot + CPT)</u>	_____
O & G	_____	VSS	_____	Mg	_____		_____

B. Cox B. E. [Signature] 11:10 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. E. [Signature] B. E. [Signature] 2:00 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105299

SEND REPORT TO: Cox (Mat + Test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/13/90

To: ALABAMA HIGHWAY DEPARTMENT



Attn: BUDDY COX

Lab number : 0105299
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/13/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:10 COX
Location : DANNELLY ANGB, 2-7-3/5ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105299	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/11/90
	Anthracene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/11/90
	Benzo(a)anthracene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/11/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluoranthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument
detection limit.

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/13/90

To: ALABAMA HIGHWAY DEPARTMENT

JUN 1990
RECEIVED
Adm
Field Office
Montg.

Attn: BUDDY COX

Lab number : 0105300
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/13/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:28 COX
Location : DANNELLY ANGB, 2-6-3/5

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105300	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/11/90
	Anthrcene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/11/90
	Benzo(a)anthacene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/11/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluocanthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105300	Bis (2-chlorororthyl) eth	0.33	ug/L	U	05/28/90
	Bis(2-chloroethoxy)meth	0.33	ug/L	U	05/28/90
	Bis (2-Chloroisopropyl)	0.33	ug/L	U	05/28/90
	Bis(2-ethylhexyl)phthal	0.33	ug/L	U	05/28/90
	Benzo(g,h,i)perylene	0.33	ug/L	U	05/28/90
	Benzidine	0.33	ug/L	U	05/28/90
	Benzo(k)fluoranthene	0.33	ug/L	U	05/28/90
	Cadmium-EP	0.01	mg/L	U	06/11/90
	Chromium-EP	0.05	mg/L	U	06/11/90
	Chrysene	0.33	ug/L	U	05/28/90
	Dibenzo(a,h)anthracene	0.33	ug/L	U	05/28/90
	Dibutyl phthalate	0.33	ug/L	U	05/28/90
	Diethyl phthalate	0.33	ug/L	U	05/28/90
	Dimethylphthalate	0.33	ug/L	U	05/28/90
	Di-n-octyl phthalate	0.33	ug/L	U	05/28/90
	Fluoranthene	0.33	ug/L	U	05/28/90
	Fluorene	0.33	ug/L	U	05/28/90
	Hexachlorobutadiene	0.33	ug/L	U	05/28/90
	Hexachlorobenzene	0.33	ug/L	U	05/28/90
	Hexachlorocyclopentadie	0.33		U	05/28/90
	Hexachloroethane	0.33	ug/L	U	05/28/90
	Mercury-EP	0.00	mg/L	U	06/11/90
	Isophrone	0.33	ug/L	U	05/28/90
	Indeno(1,2,3-cd)pyrene	0.33	ug/L	U	05/28/90
	Naphthalene	0.33	ug/L	U	05/28/90
	Nitrobenzene	0.33	ug/L	U	05/28/90
	N-nitroso-di-n-propylam	0.33	ug/L	U	05/28/90
	N-nitrosodimethylamine	0.33	ug/L	U	05/28/90
	N-nitrosodiphenylamine	0.33	ug/L	U	05/28/90
	Pyrene	0.33	ug/L	U	05/28/90
	Phenanthrene	0.33	ug/L	U	05/28/90
	Lead-EP	0.20	mg/L	U	06/11/90
	Lead in Soil	20.0	ug/g	U	06/11/90
	Selenium-EP	0.01	mg/L	U	06/11/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

Hi-way

LABORATORY:

(X) Montgomery

() Mobile

() Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction [X] Composite
Surface Water [] Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment [X] Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Dannelly ANG-B US80

Location 2-6-3/5

() Discharge from

(Point Source)

to

(Receiving Water)

Comments

Preservative(s)

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
Acid	(mg/l)	Phenol	(mg/l)	Al	(mg/l)	Mn	(mg/l)
ALK		PO ₄ -P		Ag		Na	
BOD ₅		(S ⁼)		As		Ni	
(Cl ⁻)		(SO ₄ ⁼)		Ba		Pb	
COD		TSS		Ca		Pt	
CN ⁻		TDS		Cd		Sb	
(F ⁻)		TFS		Cr ^I		Se	
Hard		TKN		Cr ⁺⁶		Zn	
NH ₃ -N		TOC		Cu		Other	
NO ₃ -N		TON		Fe		Base Neutral	
NO ₂ -N		TS		Hg		Pb (Total EPT)	
O & G		VSS		Mg			

F. Coli.

COLLECTED BY B. Cox (Signature) 5/25 11:28 DATE/TIME

RELINQUISHED BY B. Cox (Signature) 2:00 5/25/90 DATE/TIME

RECEIVED BY _____ (Signature) DATE/TIME

RELINQUISHED BY _____ (Signature) DATE/TIME

RECEIVED BY Belov Oliver (Signature) 5/25 2:00 DATE/TIME

RELINQUISHED BY _____ (Signature) DATE/TIME

RECEIVED IN LAB BY _____ (Signature) DATE/TIME

LABORATORY I.D. NO. 0105300

REPORT TO: Cox (Mat + Test)

0105300

The chromatogram of this
sample reveals a pattern
of hydrocarbons that matches
that found in kerosene.

WEE

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/13/90

To: ALABAMA HIGHWAY DEPARTMENT

JUN 1990
RECEIVED
Adem
Field Office
Montg.

Attn: BUDDY COX

Lab number : 0105302
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/13/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 9:35 COX
Location : DANNELLY ANGB, 2-1-3/5ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105302	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodib	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/11/90
	Anthrcene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/11/90
	Benzo(a)anthacene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/11/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluocanthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument
detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery () Mobile () Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction ☒ Composite
Surface Water [] Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment ☒ Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Denavally AKB US 80

Location 2-1-3/5

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>Base Metals</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	<u>Pb (Tot + EPT)</u>	_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. Cox B. E. 4/4 9:35 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. 6/4 B. 6/4 2:00 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

Shelvia Oliver 5/25 2:00
RECEIVED IN LAB BY (Signature) DATE/TIME

0105302
LABORATORY I.D. NO.

SEND REPORT TO: Cox

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/01/90

To: ALABAMA HIGHWAY DEPARTMENT

4
JUN 1990
RECEIVED
Adcm
Field Office
Mobile

Attn: BUDDY COX

Lab number : 0105298
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/01/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 10:45 COX
Location : DANNELLY ANGB. 2-4-2

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 1, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105298	1,1,1,2-Tetrachloroetha	0.0500	ug/g	U	05/31/90
	1,1,1-Trichloroethane	0.1900	ug/g		05/31/90
	1,1,2,2-Tetrachloroetha	0.0500	ug/g	U	05/31/90
	1,1,2Trichloroethane	0.0500	ug/g	U	05/31/90
	1,1-Dichloroethane	0.0500	ug/g	U	05/31/90
	1,1-Dichloroethylene	0.0500	ug/g	U	05/31/90
	1,1-Dichloropropene	0.0500	ug/g	U	05/31/90
	1,2,3-Trichlorobenzene	0.0500	ug/g	U	05/31/90
	1,2,3-Trichloropropane	0.0500	ug/g	U	05/31/90
	1,2,4-Trichlorobenzene	0.0500	ug/g	U	05/31/90
	1,2,4-Trimethylbenzene	0.0500	ug/g	U	05/31/90
	1,2-Dichloroethane	0.0500	ug/g	U	05/31/90
	1,2-Dichloropropane	0.0500	ug/g	U	05/31/90
	1,3,5-Trimethylbenzene	0.0500	ug/g	U	05/31/90
	1,3-Dichloropropane	0.0500	ug/g	U	05/31/90
	1,3-Dichloropropene	0.0500	ug/g	U	05/31/90
	2,2-Dichloropropane	0.0500	ug/g	U	05/31/90
	Tetrachloroethylene	0.0500	ug/g	U	05/31/90
	Bromobenzene	0.0500	ug/g	U	05/31/90
	Bromochloromethane	0.0500	ug/g	U	05/31/90
	Bromodichloromethane	0.0500	ug/g	U	05/31/90
	Benzene	0.0500	ug/g	U	05/31/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 1, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105298	Bromomethane	0.0500	ug/g	U	05/31/90
	cis-1,2-Dichloroethylen	0.0500	ug/g	U	05/31/90
	Chlorobenzene	0.0500	ug/g	U	05/31/90
	Chlorodibromomethane	0.0500	ug/g	U	05/31/90
	Chloroethane	0.0500	ug/g	U	05/31/90
	Bromoform	0.0500	ug/g	U	05/31/90
	Chloroform	0.0500	ug/g	U	05/31/90
	Chloromethane	0.0500	ug/g	U	05/31/90
	Carbon Tetrachloride	0.0500	ug/g	U	05/31/90
	Dibromomethane	0.0500	ug/g	U	05/31/90
	Dichlorofluoromethane	0.0500	ug/g	U	05/31/90
	Dichloromethane	0.0500	ug/g	U	05/31/90
	Ethylbenzene	0.0500	ug/g	U	05/31/90
	Fluorotrichloromethane	0.0500	ug/g	U	05/31/90
	Hexachlorobenzene	0.0500	ug/g	U	05/31/90
	Isopropylbenzene	0.0500	ug/g	U	05/31/90
	m-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	m-Xylene	0.0500	ug/g	U	05/31/90
	Naphthalene	0.0500	ug/g	U	05/31/90
	n-Butylbenzene	0.0500	ug/g	U	05/31/90
	n-Propylbenzene	0.0500	ug/g	U	05/31/90
	o-Chlorotoluene	0.0500	ug/g	U	05/31/90
	o-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	o-Xylene	0.0500	ug/g	U	05/31/90
	p-Chlorotoluene	0.0500	ug/g	U	05/31/90
	p-Dichlorobenzene	0.0500	ug/g	U	05/31/90
	p-Isopropyltoluene	0.0500	ug/g	U	05/31/90
	p-Xylene	0.0500	ug/g	U	05/31/90
	Secbutylbenzene	0.0500	ug/g	U	05/31/90
	Styrene	0.0500	ug/g	U	05/31/90
	t-1,2Dichloroethane	0.0500	ug/g	U	05/31/90
	Tertbutylbenzene	0.0500	ug/g	U	05/31/90
	Trichloroethylene	0.0500	ug/g	U	05/31/90
	Toluene	0.0500	ug/g	U	05/31/90
	Vinyl Chloride	0.0500	ug/g	U	05/31/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: Montgomery () Mobile () Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction [] Composite
Surface Water [] Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment ☒ Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Dannelly ANGB US80

Location 2-4-2

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>BTEX Vol</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____		_____
O & G	_____	VSS	_____	Mg	_____		_____

B. E. G. B. E. G. 10:45 5/25/90 B. E. G. B. E. G. 2:00 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

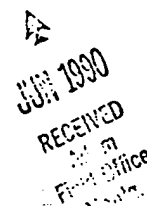
RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

D. Oliver 5/25 2:00 0105298
RECEIVED IN LAB BY (Signature) DATE/TIME LABORATORY I.D. NO.

SEND REPORT TO: Cox (Mat + Test)

- SAMPLE ANALYSIS REPORT -
05/31/90

To: ALABAMA HIGHWAY DEPARTMENT



Attn: BUDDY COX

Lab number : 0105294
Sample number : HIWAY
Sample matrix : WATER

Report Date: 05/31/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:25 COX
Location : DANNELLY ANGB, 2-3-4

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105294	1,1,1,2-Tetrachloroetha	10.0000	ug/L	U	05/28/90
	1,1,1-Trichloroethane	469.7000	ug/L		05/28/90
	1,1,2,2-Tetrachloroetha	10.0000	ug/L	U	05/28/90
	1,1,2Trichloroethane	10.0000	ug/L	U	05/28/90
	1,1-Dichloroethane	10.0000	ug/L	U	05/28/90
	1,1-Dichloroethylene	10.0000	ug/L	U	05/28/90
	1,1-Dichloropropene	10.0000	ug/L	U	05/28/90
	1,2,3-Trichlorobenzene	10.0000	ug/L	U	05/28/90
	1,2,3-Trichloropropane	10.0000	ug/L	U	05/28/90
	1,2,4-Trichlorobenzene	10.0000	ug/L	U	05/28/90
	1,2,4-Trimethylbenzene	10.0000	ug/L	U	05/28/90
	1,2-Dicholoethane	10.0000	ug/L	U	05/28/90
	1,2-Dichloropropane	10.0000	ug/L	U	05/28/90
	1,3,5-Trimethylbenzene	10.0000	ug/L	U	05/28/90
	1,3-Dichloropropane	10.0000	ug/L	U	05/28/90
	1,3-Dichloropropene	10.0000	ug/L	U	05/28/90
	2,2-Dichloropropane	10.0000	ug/L	U	05/28/90
	Tetrachloroethylene	10.0000	ug/L	U	05/28/90
	Bromobenzene	10.0000	ug/L	U	05/28/90
	Bromochloromethane	10.0000	ug/L	U	05/28/90
	Bromodichloromethane	10.0000	ug/L	U	05/28/90
	Benzene	10.0000	ug/L	U	05/28/90

* U denotes results less than the instrument
detection limit.

* denotes results less than the instrument
detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery ☐ Mobile ☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☐ Composite
Surface Water ☒ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☐ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB US80

Location 2-3-4 BTEX - Water

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments Strong Kerosene odor - Kerosene on hand Preservative(s) _____
Urban finished water

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁻)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>BTEX-Vol</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	_____	_____
O & G	_____	VSS	_____	Mg	_____	_____	_____

F. Coli. _____

B. Cox D. S. Giff 11-25 5/25/82 B. S. Giff B. E. J. 2/10 15/25/82
SAMPLE COLLECTED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

Melvin Turner 5/25 2:10 0105294
RECEIVED IN LAB BY (Signature) DATE/TIME LABORATORY I.D. NO.

SEND REPORT TO: B. Cox (Mail + Test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/22/90

To: ALABAMA HIGHWAY DEPARTMENT

A
JUN 23
RECEIVED
From
Field Office
Montg.

Attn: BUDDY COX

Lab number : 0105305
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/22/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:25 COX
Location : DANNELLY ANGB. 3-1-3/5ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105305	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/13/90
	Anthrcene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/13/90
	Benzo(a)anthracene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/13/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluocanthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105305	Bis (2-chloroethyl) eth	0.33	ug/L	U	05/28/90
	Bis(2-chloroethoxy)meth	0.33	ug/L	U	05/28/90
	Bis (2-Chloroisopropyl)	0.33	ug/L	U	05/28/90
	Bis(2-ethylhexyl)phthal	8.83	ug/L		05/28/90
	Benzo(g,h,i)perylene	0.33	ug/L	U	05/28/90
	Benzidine	0.33	ug/L	U	05/28/90
	Benzo(k)fluoranthene	0.33	ug/L	U	05/28/90
	Cadmium-EP	0.01	mg/L	U	06/13/90
	Chromium-EP	0.05	mg/L	U	06/13/90
	Chrysene	0.33	ug/L	U	05/28/90
	Dibenzo(a,h)anthracene	0.33	ug/L	U	05/28/90
	Dibutyl phthalate	0.33	ug/L	U	05/28/90
	Diethyl phthalate	0.33	ug/L	U	05/28/90
	Dimethylphthalate	0.33	ug/L	U	05/28/90
	Di-n-octyl phthalate	0.33	ug/L	U	05/28/90
	Fluoranthene	0.33	ug/L	U	05/28/90
	Fluorene	0.33	ug/L	U	05/28/90
	Hexachlorobutadiene	0.33	ug/L	U	05/28/90
	Hexachlorobenzene	0.33	ug/L	U	05/28/90
	Hexachlorocyclopentadie	0.33		U	05/28/90
	Hexachloroethane	0.33	ug/L	U	05/28/90
	Mercury-EP	0.00	mg/L	U	06/13/90
	Isophrene	0.33	ug/L	U	05/28/90
	Indeno(1,2,3-cd)pyrene	0.33	ug/L	U	05/28/90
	Naphthalene	0.33	ug/L	U	05/28/90
	Nitrobenzene	0.33	ug/L	U	05/28/90
	N-nitroso-di-n-propylam	0.33	ug/L	U	05/28/90
	N-nitrosodimethylamine	0.33	ug/L	U	05/28/90
	N-nitrosodiphenylamine	0.33	ug/L	U	05/28/90
	Pyrene	0.33	ug/L	U	05/28/90
	Phenanthrene	0.33	ug/L	U	05/28/90
	Lead-EP	0.20	mg/L	U	06/13/90
	Lead in Soil	61.7	ug/g		06/13/90
	Selenium-EP	0.01	mg/L	U	06/13/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery ☐ Mobile ☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☒ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source 3-1-3/5 (Downy ANG-B-4580)

Location 3-1-3/5

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁻)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ^{VI}	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	Base Neutrals	_____
NO ₂ -N	_____	TS	_____	Hg	_____	Pb (Tot + EP)	_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. E. C. B. E. C. 11:25 5/25/80
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. Cox B. Gf 2:00 5/25/80
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

Delia Oliver 5/25 2:00
RECEIVED IN LAB BY (Signature) DATE/TIME

0105305
LABORATORY I.D. NO.

SEND REPORT TO: Cox (Mat + Test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/13/90

To: ALABAMA HIGHWAY DEPARTMENT

JUL 1990
RECEIVED
Adm
Field Office
Montg.

Attn: BUDDY COX

Lab number : 0105301
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/13/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:20 COX
Location : DANNELLY ANGB, 3-2-3/5ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105301	1,2,4.-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/11/90
	Anthrcene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/11/90
	Benzo(a)anthacene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/11/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluocanthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument
detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 13. 1990

Lab#	Test	Result	Units	DL*	Analdate
0105301	Bis (2-chlorororthyl) eth	0.33	ug/L	U	05/28/90
	Bis(2-chloroethoxy)meth	0.33	ug/L	U	05/28/90
	Bis (2-Chloroisopropyl)	0.33	ug/L	U	05/28/90
	Bis(2-ethylhexyl)phthal	0.33	ug/L	U	05/28/90
	Benzo(g,h,i)perylene	0.33	ug/L	U	05/28/90
	Benzidine	0.33	ug/L	U	05/28/90
	Benzo(k)fluoranthene	0.33	ug/L	U	05/28/90
	Cadmium-EP	0.01	mg/L	U	06/11/90
	Chromium-EP	0.05	mg/L	U	06/11/90
	Chrysene	0.33	ug/L	U	05/28/90
	Dibenzo(a,h)anthracene	0.33	ug/L	U	05/28/90
	Dibutyl phthalate	0.33	ug/L	U	05/28/90
	Diethyl phthalate	0.33	ug/L	U	05/28/90
	Dimethylphthalate	0.33	ug/L	U	05/28/90
	Di-n-octyl phthalate	0.33	ug/L	U	05/28/90
	Fluoranthene	0.33	ug/L	U	05/28/90
	Fluorene	0.33	ug/L	U	05/28/90
	Hexachlorobutadiene	0.33	ug/L	U	05/28/90
	Hexachlorobenzene	0.33	ug/L	U	05/28/90
	Hexachlorocyclopentadie	0.33		U	05/28/90
	Hexachloroethane	0.33	ug/L	U	05/28/90
	Mercury-EP	0.00	mg/L	U	06/11/90
	Isophrone	0.33	ug/L	U	05/28/90
	Indeno(1,2,3-cd)pyrene	0.33	ug/L	U	05/28/90
	Naphthalene	0.33	ug/L	U	05/28/90
	Nitrobenzene	0.33	ug/L	U	05/28/90
	N-nitroso-di-n-propylam	0.33	ug/L	U	05/28/90
	N-nitrosodimethylamine	0.33	ug/L	U	05/28/90
	N-nitrosodiphenylamine	0.33	ug/L	U	05/28/90
	Pyrene	0.33	ug/L	U	05/28/90
	Phenanthrene	0.33	ug/L	U	05/28/90
	Lead-EP	0.20	mg/L	U	06/11/90
	Lead in Soil	28.0	ug/g		06/11/90
	Selenium-EP	0.01	mg/L	U	06/11/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery ☐ Mobile ☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☒ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB US80

Location 3-2-3/5

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>Box Neutral</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	<u>Rh (Tot+EPT)</u>	_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. Cox 5/25/50 11:20
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. Cox 5/25/50 2:00
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

Delora Oliver 5/25 2:00
RECEIVED IN LAB BY (Signature) DATE/TIME

0105301
LABORATORY I.D. NO.

SEND REPORT TO: Cox (Mat. & Test Highway)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
05/31/90

To: ALABAMA HIGHWAY DEPARTMENT

JUN 1990
RECEIVED
Adem
Field Office
Montg

Attn: BUDDY COX

Lab number : 0105293
Sample number : HIWAY
Sample matrix : WATER

Report Date: 05/31/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:50 COX
Location : DANNELLY ANGB, 3-4-4

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105293	1,1,1,2-Tetrachloroetha	10.0000	ug/L	U	05/28/90
	1,1,1-Trichloroethane	10.0000	ug/L	U	05/28/90
	1,1,2,2-Tetrachloroetha	10.0000	ug/L	U	05/28/90
	1,1,2Trichloroethane	10.0000	ug/L	U	05/28/90
	1,1-Dichloroethane	10.0000	ug/L	U	05/28/90
	1,1-Dichloroethylene	10.0000	ug/L	U	05/28/90
	1,1-Dichloropropene	10.0000	ug/L	U	05/28/90
	1,2,3-Trichlorobenzene	10.0000	ug/L	U	05/28/90
	1,2,3-Trichloropropane	10.0000	ug/L	U	05/28/90
	1,2,4-Trichlorobenzene	10.0000	ug/L	U	05/28/90
	1,2,4-Trimethylbenzene	10.0000	ug/L	U	05/28/90
	1,2-Dicholoethane	10.0000	ug/L	U	05/28/90
	1,2-Dichloropropane	10.0000	ug/L	U	05/28/90
	1,3,5-Trimethylbenzene	10.0000	ug/L	U	05/28/90
	1,3-Dichloropropane	10.0000	ug/L	U	05/28/90
	1,3-Dichloropropene	10.0000	ug/L	U	05/28/90
	2,2-Dichloropropane	10.0000	ug/L	U	05/28/90
	Tetrachloroethylene	10.0000	ug/L	U	05/28/90
	Bromobenzene	10.0000	ug/L	U	05/28/90
	Bromochloromethane	10.0000	ug/L	U	05/28/90
	Bromodichloromethane	10.0000	ug/L	U	05/28/90
	Benzene	10.0000	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105293	Bromomethane	10.0000	ug/L	U	05/28/90
	cis-1,2-Dichloroethylen	10.0000	ug/L	U	05/28/90
	Chlorobenzene	10.0000	ug/L	U	05/28/90
	Chlorodibromomethane	10.0000	ug/L	U	05/28/90
	Chloroethane	10.0000	ug/L	U	05/28/90
	Bromoform	10.0000	ug/L	U	05/28/90
	Chloroform	10.0000	ug/L	U	05/28/90
	Chloromethane	10.0000	ug/L	U	05/28/90
	Carbon Tetrachloride	10.0000	ug/L	U	05/28/90
	Dibromomethane	10.0000	ug/L	U	05/28/90
	Dichlorofluoromethane	10.0000	ug/L	U	05/28/90
	Dichloromethane	10.0000	ug/L	U	05/28/90
	Ethylbenzene	10.0000	ug/L	U	05/28/90
	Fluorotrichloromethane	10.0000	ug/L	U	05/28/90
	Hexachlorobenzene	10.0000	ug/L	U	05/28/90
	Isopropylbenzene	10.0000	ug/L	U	05/28/90
	m-Dichlorobenzene	10.0000	ug/L	U	05/28/90
	m-Xylene	10.0000	ug/L	U	05/28/90
	Naphthalene	10.0000	ug/L	U	05/28/90
	n-Butylbenzene	10.0000	ug/L	U	05/28/90
	n-Propylbenzene	10.0000	ug/L	U	05/28/90
	o-Chlorotoluene	10.0000	ug/L	U	05/28/90
	o-Dichlorobenzene	10.0000	ug/L	U	05/28/90
	o-Xylene	10.0000	ug/L	U	05/28/90
	p-Chlorotoluene	10.0000	ug/L	U	05/28/90
	p-Dichlorobenzene	10.0000	ug/L	U	05/28/90
	p-Isopropyltoluene	10.0000	ug/L	U	05/28/90
	p-Xylene	10.0000	ug/L	U	05/28/90
	Secbutylbenzene	10.0000	ug/L	U	05/28/90
	Styrene	10.0000	ug/L	U	05/28/90
	t-1,2Dichloroethane	10.0000	ug/L	U	05/28/90
	Tertbutylbenzene	10.0000	ug/L	U	05/28/90
	Trichloroethylene	10.0000	ug/L	U	05/28/90
	Toluene	10.0000	ug/L	U	05/28/90
	Vinyl Chloride	10.0000	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY: ☒ Montgomery () Mobile () Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction [] Composite
Surface Water ☒ Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment [] Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Danwell, AUGB

Location 3-4-4 Water

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>BTEX - vol</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	_____	_____
O & G	_____	VSS	_____	Mg	_____	_____	_____

F. Coli. _____

B.E. 4/1 B.E. 4/1 11:50 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

B.E. 4/1 2:05 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

Melvin Oliver 5/25 2:05
RECEIVED IN LAB BY (Signature) DATE/TIME

0105293
LABORATORY I.D. NO.

SEND REPORT TO: Buddy Cox Materials & Test

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
05/31/90

To: ALABAMA HIGHWAY DEPARTMENT

JUN 1990
RECEIVED
Adem
Field Office
Mobile

Attn: BUDDY COX

Lab number : 0105295
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 05/31/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 11:50 COX
Location : DANNELLY ANGB, 3-3-2ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105295	1,1,1,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,1-Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1,2,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,2Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethylene	0.0500	ug/g	U	05/29/90
	1,1-Dichloropropene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichloropropane	0.0500	ug/g	U	05/29/90
	1,2,4-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,4-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,2-Dicholoethane	0.0500	ug/g	U	05/29/90
	1,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3,5-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropene	0.0500	ug/g	U	05/29/90
	2,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	Tetrachloroethylene	0.0500	ug/g	U	05/29/90
	Bromobenzene	0.0500	ug/g	U	05/29/90
	Bromochloromethane	0.0500	ug/g	U	05/29/90
	Bromodichloromethane	0.0500	ug/g	U	05/29/90
	Benzene	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument
detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105295	Bromomethane	0.0500	ug/g	U	05/29/90
	cis-1,2-Dichloroethylen	0.0500	ug/g	U	05/29/90
	Chlorobenzene	0.0500	ug/g	U	05/29/90
	Chlorodibromomethane	0.0500	ug/g	U	05/29/90
	Chloroethane	0.0500	ug/g	U	05/29/90
	Bromoform	0.0500	ug/g	U	05/29/90
	Chloroform	0.0500	ug/g	U	05/29/90
	Chloromethane	0.0500	ug/g	U	05/29/90
	Carbon Tetrachloride	0.0500	ug/g	U	05/29/90
	Dibromomethane	0.0500	ug/g	U	05/29/90
	Dichlorofluoromethane	0.0500	ug/g	U	05/29/90
	Dichloromethane	0.0500	ug/g	U	05/29/90
	Ethylbenzene	0.0500	ug/g	U	05/29/90
	Fluorotrichloromethane	0.0500	ug/g	U	05/29/90
	Hexachlorobenzene	0.0500	ug/g	U	05/29/90
	Isopropylbenzene	0.0500	ug/g	U	05/29/90
	m-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	m-Xylene	0.0500	ug/g	U	05/29/90
	Naphthalene	0.0500	ug/g	U	05/29/90
	n-Butylbenzene	0.0500	ug/g	U	05/29/90
	n-Propylbenzene	0.0500	ug/g	U	05/29/90
	o-Chlorotoluene	0.0500	ug/g	U	05/29/90
	o-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	o-Xylene	0.0500	ug/g	U	05/29/90
	p-Chlorotoluene	0.0500	ug/g	U	05/29/90
	p-Dichlorobenzene	0.0500	ug/g	U	05/29/90
	p-Isopropyltoluene	0.0500	ug/g	U	05/29/90
	p-Xylene	0.0500	ug/g	U	05/29/90
	Secbutylbenzene	0.0500	ug/g	U	05/29/90
	Styrene	0.0500	ug/g	U	05/29/90
	t-1,2Dichloroethane	0.0500	ug/g	U	05/29/90
	Tertbutylbenzene	0.0500	ug/g	U	05/29/90
	Trichloroethylene	0.0500	ug/g	U	05/29/90
	Toluene	0.0500	ug/g	U	05/29/90
	Vinyl Chloride	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

Hi-Way

LABORATORY: (X) Montgomery () Mobile () Birmingham

Sample Type: Potable Water [] Landfill Leachate [] Toxic Extraction [] Composite
Surface Water [] Hazardous Wastesite [] Ignitability [] Grab
Soil/Sediment [X] Groundwater [] Corrosivity [] Container P
Wastewater [] Waste (Special Handling) [] Reactivity [] G

Source Danvelly ANGB US80

Location 3-3-2

() Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	BTX Vol	_____
NO ₂ -N	_____	TS	_____	Hg	_____		_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. Cox B.E. V. 11:50 AM 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

B. Gx D. G. 2:00 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105295

SEND REPORT TO: Cox (mat + test)

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/22/90

To: ALABAMA HIGHWAY DEPARTMENT

△
JUN 21 1990
RECEIVED
Adm
Field Office
Montz.

Attn: BUDDY COX

Lab number : 0105304
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/22/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 12:15 COX
Location : DANNELLY ANGB. 4-1-3/5

ADEM CENTRAL LABORATORY
- RESULTS REPORT

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105304	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl eh	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl e	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/13/90
	Anthracene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/13/90
	Benzo(a)anthracene	0.33	ug/L	U	05/28/90
	Barium-EP	0.50	mg/L	U	06/13/90
	Benzo(a)pyrene	0.33	ug/L	U	05/28/90
	Benzo(b)fluoranthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105304	Bis (2-chlorororthyl) eth	0.33	ug/L	U	05/28/90
	Bis(2-chloroethoxy)meth	0.33	ug/L	U	05/28/90
	Bis (2-Chloroisopropyl)	0.33	ug/L	U	05/28/90
	Bis(2-ethylhexyl)phthal	0.33	ug/L	U	05/28/90
	Benzo(g,h,i)perylene	0.33	ug/L	U	05/28/90
	Benzidine	0.33	ug/L	U	05/28/90
	Benzo(k)fluoranthene	0.33	ug/L	U	05/28/90
	Cadmium-EP	0.01	mg/L	U	06/13/90
	Chromium-EP	0.05	mg/L	U	06/13/90
	Chrysene	0.33	ug/L	U	05/28/90
	Dibenzo(a,h)anthracene	0.33	ug/L	U	05/28/90
	Dibutyl phthalate	0.33	ug/L	U	05/28/90
	Diethyl phthalate	0.33	ug/L	U	05/28/90
	Dimethylphthalate	0.33	ug/L	U	05/28/90
	Di-n-octyl phthalate	0.33	ug/L	U	05/28/90
	Fluoranthene	0.33	ug/L	U	05/28/90
	Fluorene	0.33	ug/L	U	05/28/90
	Hexachlorobutadiene	0.33	ug/L	U	05/28/90
	Hexachlorobenzene	0.33	ug/L	U	05/28/90
	Hexachlorocyclopentadie	0.33		U	05/28/90
	Hexachloroethane	0.33	ug/L	U	05/28/90
	Mercury-EP	0.00	mg/L	U	06/13/90
	Isophrone	0.33	ug/L	U	05/28/90
	Indeno(1,2,3-cd)pyrene	0.33	ug/L	U	05/28/90
	Naphthalene	0.33	ug/L	U	05/28/90
	Nitrobenzene	0.33	ug/L	U	05/28/90
	N-nitroso-di-n-propylam	0.33	ug/L	U	05/28/90
	N-nitrosodimethylamine	0.33	ug/L	U	05/28/90
	N-nitrosodiphenylamine	0.33	ug/L	U	05/28/90
	Pyrene	0.33	ug/L	U	05/28/90
	Phenanthrene	0.33	ug/L	U	05/28/90
	Lead-EP	0.20	mg/L	U	06/13/90
	Lead in Soil	23.7	ug/g		06/13/90
	Selenium-EP	0.01	mg/L	U	06/13/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

Hurray

LABORATORY:

☒ Montgomery

☐ Mobile

☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☒ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannely ANGB - Fence Line

Location 4-1-3/5

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid		Phenol		Al		Mn	
ALK		PO ₄ -P		Ag		Na	
BOD ₅		(S ⁼)		As		Ni	
(Cl ⁻)		(SO ₄ ⁼)		Ba		Pb	
COD		TSS		Ca		Pt	
CN ⁻		TDS		Cd		Sb	
(F ⁻)		TFS		Cr ^I		Se	
Hard		TKN		Cr ⁺⁶		Zn	
NH ₃ -N		TOC		Cu		Other	
NO ₃ -N		TON		Fe		Base Neutrals	
NO ₂ -N		TS		Hg		Lead (Tot & EP)	
O & G		VSS		Mg			

F. Coli. _____

B.E. Cox Jr P.E. Off 5/25/90 12:15
SAMPLE COLLECTED BY (Signature) DATE/TIME

B.E. Off 5/25/90 2:00 p.m.
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105304

SEND REPORT TO: Cox (Mat & Test) 242-6257

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
06/22/90

To: ALABAMA HIGHWAY DEPARTMENT

RECEIVED
Adem
Field Office
Montg.

Attn: BUDDY COX

Lab number : 0105306
Sample number : HIWAY
Sample matrix : SOIL

Report Date: 06/22/90

COLLECTION INFORMATION

Date/Time/By: 05/25/90 12:40 COX
Location : DANNELLY ANGB, 4-3-3/5

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105306	1,2,4,-Trichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,2-Diphenylhydrazine	0.33	ug/L	U	05/28/90
	1,3-Dichlorobenzene	0.33	ug/L	U	05/28/90
	1,4-Dichlorobenzene	0.33	ug/L	U	05/28/90
	2,3,7,8-Tetrachlorodibe	0.33	ug/L	U	05/28/90
	2,4-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2,6-Dinitrotoluene	0.33	ug/L	U	05/28/90
	2-Chloronaphthalene	0.33	ug/L	U	05/28/90
	3,3'-Dichlorobenzidine	0.33	ug/L	U	05/28/90
	4-Bromophenyl phenyl ch	0.33	ug/L	U	05/28/90
	4-Chlorophenyl phenyl c	0.33	ug/L	U	05/28/90
	Acenaphthalene	0.33	ug/L	U	05/28/90
	Acenaphthene	0.33	ug/L	U	05/28/90
	Silver-EP	0.05	mg/L	U	06/13/90
	Anthracene	0.33	ug/L	U	05/28/90
	Arsenic-EP	0.01	mg/L	U	06/13/90
	Benzo(a)anthracene	1.93	ug/g		05/28/90
	Barium-EP	0.50	mg/L	U	06/13/90
	Benzo(a)pyrene	2.10	ug/L		05/28/90
	Benzo(b)fluoranthene	0.33	ug/L	U	05/28/90
	Butyl benzyl phthalate	0.33	ug/L	U	05/28/90

* U denotes results less than the instrument detection limit.

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

June 22, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105306	Bis (2-chlororethyl) eth	0.33	ug/L	U	05/28/90
	Bis(2-chloroethoxy)meth	0.33	ug/L	U	05/28/90
	Bis (2-Chloroisopropyl)	0.33	ug/L	U	05/28/90
	Bis(2-ethylhexyl)phthal	24.40	ug/g		05/28/90
	Benzo(g,h,i)perylene	0.33	ug/L	U	05/28/90
	Benzidine	0.33	ug/L	U	05/28/90
	Benzo(k)fluoranthene	0.33	ug/L	U	05/28/90
	Cadmium-EP	0.01	mg/L	U	06/13/90
	Chromium-EP	0.05	mg/L	U	06/13/90
	Chrysene	4.03	ug/g		05/28/90
	Dibenzo(a,h)anthracene	0.33	ug/L	U	05/28/90
	Dibutyl phthalate	0.33	ug/L	U	05/28/90
	Diethyl phthalate	0.33	ug/L	U	05/28/90
	Dimethylphthalate	0.33	ug/L	U	05/28/90
	Di-n-octyl phthalate	0.33	ug/L	U	05/28/90
	Fluoranthene	3.53	ug/L		05/28/90
	Fluorene	0.33	ug/L	U	05/28/90
	Hexachlorobutadiene	0.33	ug/L	U	05/28/90
	Hexachlorobenzene	0.33	ug/L	U	05/28/90
	Hexachlorocyclopentadie	0.33		U	05/28/90
	Hexachloroethane	0.33	ug/L	U	05/28/90
	Mercury-EP	0.00	mg/L	U	06/13/90
	Isophrone	0.33	ug/L	U	05/28/90
	Indeno(1,2,3-cd)pyrene	0.33	ug/L	U	05/28/90
	Naphthalene	0.33	ug/L	U	05/28/90
	Nitrobenzene	0.33	ug/L	U	05/28/90
	N-nitroso-di-n-propylam	0.33	ug/L	U	05/28/90
	N-nitrosodimethylamine	0.33	ug/L	U	05/28/90
	N-nitrosodiphenylamine	0.33	ug/L	U	05/28/90
	Pyrene	2.76	ug/g		05/28/90
	Phenanthrene	2.66	ug/g		05/28/90
	Lead-EP	0.20	mg/L	U	06/13/90
	Lead in Soil	25.1	ug/g		06/13/90
	Selenium-EP	0.01	mg/L	U	06/13/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY:

☒ Montgomery

☐ Mobile

☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☒ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannally ANGO 4580

Location 4-3-3/5

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁼)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	Base Nea. / Pb	_____
NO ₂ -N	_____	TS	_____	Hg	_____	Totals	_____
O & G	_____	VSS	_____	Mg	_____		_____

F. Coli. _____

B. E. H. B. E. H. 12:40 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME

D. G. X 2:00 5/25/90
RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME

LABORATORY I.D. NO. 0105306

SEND REPORT TO: Cox (Mgt. & Test)

242-6527

Sample matrix : SOIL

COLLECTION INFORMATION

Date/Time/By: 05/25/90 12:35 COX

Location : DANNELLY ANGB, 4-2-2

ADEM CENTRAL LABORATORY

- RESULTS REPORT -

May 31, 1990

Lab#	Test	Result	Units	DL*	Analdate
0105296	1,1,1,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,1-Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1,2,2-Tetrachloroetha	0.0500	ug/g	U	05/29/90
	1,1,2Trichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethane	0.0500	ug/g	U	05/29/90
	1,1-Dichloroethylene	0.0500	ug/g	U	05/29/90
	1,1-Dichloropropene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,3-Trichloropropane	0.0500	ug/g	U	05/29/90
	1,2,4-Trichlorobenzene	0.0500	ug/g	U	05/29/90
	1,2,4-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,2-Dichloroethane	0.0500	ug/g	U	05/29/90
	1,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3,5-Trimethylbenzene	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropane	0.0500	ug/g	U	05/29/90
	1,3-Dichloropropene	0.0500	ug/g	U	05/29/90
	2,2-Dichloropropane	0.0500	ug/g	U	05/29/90
	Tetrachloroethylene	0.0500	ug/g	U	05/29/90
	Bromobenzene	0.0500	ug/g	U	05/29/90
	Bromochloromethane	0.0500	ug/g	U	05/29/90
	Bromodichloromethane	0.0500	ug/g	U	05/29/90
	Benzene	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument detection limit.

Toluene	0.0500	ug/g	U	05/29/90
Vinyl Chloride	0.0500	ug/g	U	05/29/90

* U denotes results less than the instrument detection limit.

STATE OF ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MONTGOMERY, ALABAMA

LABORATORY:

☒ Montgomery

☐ Mobile

☐ Birmingham

Sample Type: Potable Water ☐ Landfill Leachate ☐ Toxic Extraction ☐ Composite
Surface Water ☐ Hazardous Wastesite ☐ Ignitability ☐ Grab
Soil/Sediment ☒ Groundwater ☐ Corrosivity ☐ Container P
Wastewater ☐ Waste (Special Handling) ☐ Reactivity ☐ G

Source Dannelly ANGB US80

Location 4-B-02

☐ Discharge from _____ to _____
(Point Source) (Receiving Water)

Comments _____ Preservative(s) _____

pH _____ D.O. _____ Sp. Cond. _____ Salinity _____ Turb. _____

PARAMETERS

Date	Value	Date	Value	Date	Value	Date	Value
(mg/l)		(mg/l)		(mg/l)		(mg/l)	
Acid	_____	Phenol	_____	Al	_____	Mn	_____
ALK	_____	PO ₄ -P	_____	Ag	_____	Na	_____
BOD ₅	_____	(S ⁻)	_____	As	_____	Ni	_____
(Cl ⁻)	_____	(SO ₄ ⁼)	_____	Ba	_____	Pb	_____
COD	_____	TSS	_____	Ca	_____	Pt	_____
CN ⁻	_____	TDS	_____	Cd	_____	Sb	_____
(F ⁻)	_____	TFS	_____	Cr ^I	_____	Se	_____
Hard	_____	TKN	_____	Cr ⁺⁶	_____	Zn	_____
NH ₃ -N	_____	TOC	_____	Cu	_____	Other	_____
NO ₃ -N	_____	TON	_____	Fe	_____	<u>BLEX-Vol</u>	_____
NO ₂ -N	_____	TS	_____	Hg	_____	_____	_____
O & G	_____	VSS	_____	Mg	_____	_____	_____

B. G. / B. E. / 12:35 5/25/90 B. G. / B. E. / 2:00 5/25/90
SAMPLE COLLECTED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED BY (Signature) DATE/TIME RELINQUISHED BY (Signature) DATE/TIME

RECEIVED IN LAB BY (Signature) DATE/TIME LABORATORY I.D. NO. 0105296

SEND REPORT TO: Box (Met + Test)

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



Guy Hunt
Governor

Leigh Pegues, Director

1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36130
205/271-7700

June 19, 1990

M E M O R A N D U M

Field Offices:

Unit 806, Building 8
225 Oxmoor Circle
Birmingham, AL
35209
205/942-6168

P.O. Box 953
Decatur, AL
35602
205/353-1713

2204 Perimeter Road
Mobile, AL
36615
205/479-2336

TO: Buddy Cox
Highway Department

FROM: John Chitwood *J.C./mt*

SUBJECT: Laboratory Results

Attached are laboratory results from samples submitted to the ADEM Central Laboratory for analysis by the Highway Department.

JC/mpt

Attachments

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



Guy Hunt
Governor

Leigh Pegues, Director

1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36130
205/271-7700

June 8, 1990

M E M O R A N D U M

TO: Buddy Cox
Highway Department

FROM: John Chitwood *fec*

SUBJECT: Laboratory Results

Attached are laboratory results from samples submitted to the ADEM Central Laboratory for analysis by the Highway Department.

Field Offices:

Unit 806, Building 8
225 Oxmoor Circle
Birmingham, AL
35209
205/942-6168

P.O. Box 953
Decatur, AL
35602
205/353-1713

JC/mpt

Attachments

2204 Perimeter Road
Mobile, AL
36615
205/479-2336

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



Guy Hunt
Governor

Leigh Pegues, Director

June 5, 1990

1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36130
205/271-7700

Mr. Buddy E. Cox
Materials & Tests
Alabama Highway Department
Fairgrounds Road
Montgomery, Alabama 36130

Field Offices:

Unit 806, Building 8
225 Oxmoor Circle
Birmingham, AL
35209
205/942-6168

P.O. Box 953
Decatur, AL
35602
205/353-1713

2204 Perimeter Road
Mobile, AL
36615
205/479-2336

RE: Samples 0105293, 0105294,
0105295, 0105296, and 0105297

Dear Mr. Cox:

Attached please find results of samples submitted to the Department of Environmental Management Laboratory on May 5, 1990. Should you have any questions with regard to the results please contact Mr. Joe Marsh at 271-7980

Sincerely,

E. John Williford, Chief
Field Operations Division

EJW/TM/km

Enclosure

cc: Mr. Joe Marsh

INVOICE

To:

Attn:

Our Lab #: 0105293
Your Sample ID: HIRAY
Sample Matrix: WATER

Invoice No.: 0103191

Invoice Date: 05/30/

INVOICE SUMMARY: Test Charges: 150.00 150.0
Additional Charges:

\$ 150.0

TOTAL \$ 150.0

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105293	11ICE	
0105293	CX	
0105293	OCCE	
0105293	120CE	
0105293	PCCE	
0105293	OCT	
0105293	EEZ	
0105293	DEI	
0105293	FX	
0105293	MX	
0105293	TCE	150.00
0105293	130CP	
0105293	11CE	
0105293	130P	
0105293	PCP	
0105293	CB	
0105293	111TCE	0.00
0105293	MOCK	
0105293	1112TE	
0105293	T12CP	
0105293	CT	
0105293	NCH	
0105293	120CP	
0105293	EE	
0105293	SM	
0105293	TOL	
0105293	GBB	
0105293	111CP	
0105293	CE	
0105293	CHCL3	

Label	Text	Page
0105293	CH	
0105293	H	
0105293	HEB	
0105293	PIST	
0105293	124HBL	
0105293	TBR	
0105293	120TCE	
0105293	124DCB	
0105293	12DCB	
0105293	ABCG	
0105293	CHBZ	
0105293	124H	
0105293	VC	
0105293	STY	
0105293	ECM	
0105293	CCBN	
0105293	DCBN	
0105293	HEB	
0105293	IPB	
0105293	112LYE	
0105293	17THB	
0105293	RB	
0105293	SCLL	
0105293	112TCE	
0105293	C120	
0105293	FICH	
0105293	NBB	

INVOICE

To:

Attn:

Our Lab # : 0105294
Your Sample ID: HIRAY
Sample Matrix : WATER

Invoice No.: 0103192

Invoice Date: 05/30/90

150.00

INVOICE SUMMARY: Test Charge: 150.00
Additional Charges:

\$ 150.00

TOTAL \$ 150.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105294	11DCE	
0105294	111DCE	0.00
0105294	12DCE	
0105294	DX	
0105294	VC	
0105294	CDEM	
0105294	FDCE	
0105294	PX	
0105294	32DCP	
0105294	CB	
0105294	FTCM	
0105294	POH	
0105294	STY	
0105294	135HB	
0105294	112TCE	
0105294	EB	
0105294	BM	
0105294	TOL	
0105294	FEZ	
0105294	CT	
0105294	T12EC	
0105294	12ATCB	
0105294	BB	
0105294	CHRE	
0105294	12ATP	
0105294	HGB	
0105294	BDCM	
0105294	TCE	150.00
0105294	CE	
0105294	CHCL3	

Lab#	Test	Fee
0105294	CM	
0105294	P1ST	
0105294	PCN	
0105294	PCIC	
0105294	11221E	
0105294	13CP	
0105294	C12E	
0105294	124THA	
0105294	123TCB	
0105294	HCB	
0105294	EX	
0105294	130CP	
0105294	170CP	
0105294	1112PM	
0105294	HCCC	
0105294	DDCB	
0105294	TBB	
0105294	H	
0105294	IPB	
0105294	OCT	
0105294	FCT	
0105294	SEB	
0105294	DECM	
0105294	110CP	
0105294	11CD	
0105294	HPB	
0105294	DEM	

Atlas

Don't Lab 3 : 300175

Invoice No : 0102173

Don't Sample ID: 111

Invoice Date: 05/05/00

Sample Matrix : 50H

INVOICE SUMMARY: Test Charge: 200.00 200.00
Additional Charges:

\$ 200.00

TOTAL \$ 200.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105295	OLCB	
0105295	HDCB	
0105295	PCT	
0105295	120CE	
0105295	BB	
0105295	BDCB	
0105295	12DCP	
0105295	CHRG3	
0105295	PM	
0105295	CB	
0105295	DCM	
0105295	VC	
0105295	OX	
0105295	130CP	
0105295	DEM	
0105295	1127TE	
0105295	TCE	200.00
0105295	T120C	
0105295	C120	
0105295	120CP	
0105295	11DCP	
0105295	PK	
0105295	1241NB	
0105295	PK	
0105295	ECM	
0105295	HBB	
0105295	ECFM	
0105295	CDBB	
0105295	TCL	
0105295	P1ST	

Lab#	Test	Fee
------	------	-----

0105295	H	
0105295	HCB	
0105295	PCT	
0105295	120C	
0105295	120CP	

Lab	Test	Fee
0105295	H	
0105295	1600	
0105295	CTT	
0105295	1000	
0105295	12000	
0105295	500	
0105295	TBB	
0105295	12000	
0105295	1100	
0105295	CHCL3	
0105295	CM	
0105295	1112TE	
0105295	CT	
0105295	1117CE	0.00
0105295	FTCH	
0105295	CE	
0105295	JFB	
0105295	HCB	
0105295	130MB	
0105295	1127CE	
0105295	110CE	
0105295	POC3	
0105295	BEZ	
0105295	EB	
0105295	1047CB	
0105295	40LE	
0105295	STY	

Attn:

Our Lab # : 0105296
 Your Sample ID: H1967
 Sample Matrix : SOIL

Invoice No.: 0103174

Invoice Date: 05/30/90

INVOICE SUMMARY: Test Charges: 200.00 200.00
 Additional Charges:

\$ 200.00

TOTAL

\$ 200.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105296	OX	
0105296	SBM	
0105296	LB	
0105296	T120C	
0105296	DCM	
0105296	STY	
0105296	ODCB	
0105296	C120	
0105296	MDCB	
0105296	22DCP	
0105296	12DCP	
0105296	13CP	
0105296	13SNB	
0105296	TOL	
0105296	11127E	
0105296	123TP	
0105296	201 E	
0105296	11227E	
0105296	13DCP	
0105296	PX	
0105296	PDCB	
0105296	HX	
0105296	11CD	
0105296	DM	
0105296	HEB	
0105296	DCFB	
0105296	PCT	
0105296	HPB	
0105296	IPB	
0105296	P1ST	

Lab#	Test	Fee
0105296	1127CE	
0105296	1231CE	
0105296	1241CE	

TABLE	UNIT	PRICE
0105296	1117CE	
0105296	1231CC	
0105296	124TCB	
0105296	124TDB	
0105296	111TCF	0.00
0105296	FICM	
0105296	CT	
0105296	120CL	
0105296	EEZ	
0105296	CE	
0105296	11DCP	
0105296	11DCE	
0105296	CCY	
0105296	TCE	200.00
0105296	HCB	
0105296	CNRX3	
0105296	EM	
0105296	CDMS	
0105296	CHCL3	
0105296	CM	
0105296	TEB	
0105296	SB	
0105296	VC	
0105296	BCH	
0105296	BICM	
0105296	N	
0105296	CB	

INVOICE

To:

Attn:

Our Lab # : 0105297
Your Sample ID: H1867
Sample Matrix : SOIL

Invoice No.: 0103195

Invoice Date: 05/30/90

INVOICE SUMMARY: Test Charge: 200.00 200.00
Additional Charges:

\$ 200.00

TOTAL \$ 200.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
------	------	-----

0105297	11DCE	
0105297	HDCB	
0105297	PTCB	
0105297	YAB	
0105297	CT	
0105297	SEZ	
0105297	HCB	
0105297	IPG	
0105297	12DCE	
0105297	1112TL	
0105297	CHERT	
0105297	TCE	200.00
0105297	112TCE	
0105297	1231CB	
0105297	1122CE	
0105297	SOLE	
0105297	1231P	
0105297	RDCM	
0105297	HFB	
0105297	VC	
0105297	BM	
0105297	CB	
0105297	FTCH	
0105297	DCFH	
0105297	13CF	
0105297	TOL	
0105297	BE	
0105297	CHCL3	
0105297	CH	
0105297	SEB	

Lab#	Test	Fee
------	------	-----

0105297	NY	
---------	----	--

Lab#	Test	Fee
0105297	DM	
0105297	124TCE	
0105297	1245HB	
0105297	038	
0105297	01CE	
0105297	PY	
0105297	OK	
0105297	C18C	
0105297	135MB	
0105297	208	
0105297	121CF	
0105297	120CF	
0105297	FIST	
0105297	H	
0105297	EB	
0105297	STY	
0105297	T121C	
0105297	DCM	
0105297	11CD	
0105297	ECT	
0105297	111CF	
0105297	UGed	
0105297	CE	
0105297	111TCE	0.00
0105297	CCT	
0105297	HBB	
0105297	22PCF	

INVOICE

To:

Attn:

Our Lab # : 0105298
 Your Sample ID: H1245
 Sample Matrix: SOLL

Invoice No.: 0103196

Invoice Date: 05/30/90

INVOICE SUMMARY: Test Charges: 200.00 200.00
 Additional Charges:

\$ 200.00

TOTAL \$ 200.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105298	124H-B	
0105298	T120C	
0105298	DCM	
0105298	11DCP	
0105298	11CD	
0105298	13CP	
0105298	0DCB	
0105298	111TCE	0.00
0105298	VC	
0105298	TCE	200.00
0105298	EM	
0105298	CHBRS	
0105298	JX	
0105298	PDCB	
0105298	12ICP	
0105298	22DCP	
0105298	EB	
0105298	C120	
0105298	CM	
0105298	CT	
0105298	12DCE	
0105298	REZ	
0105298	DBM	
0105298	HOCB	
0105298	124TCB	
0105298	123TCB	
0105298	BB	
0105298	B0CH	
0105298	PX	
0105298	TOL	

Lab#	Test	Fee
------	------	-----

Lab#	Test	Fee
0105298	SIY	
0105298	10437	
0105298	006H	
0105298	CE	
0105298	CHCL	
0105298	CCP	
0105298	HCB	
0105298	JPG	
0105298	1122IE	
0105298	135H	
0105298	112TCE	
0105298	1107E	
0105298	ECM	
0105298	H86	
0105298	0CLE	
0105298	123TP	
0105298	1BB	
0105298	PCT	
0105298	CB	
0105298	HX	
0105298	H	
0105298	11173E	
0105298	HFB	
0105298	FICH	
0105298	CCT	
0105298	SEB	
0105298	PIST	

INVOICE

To:

Attn:

Our Lab # : 0105299
Your Sample ID: H1000
Sample Matrix : SOIL

Invoice No.: 0103197

Invoice Date: 05/30/97

INVOICE SUMMARY: Test Charges: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105299	NNFM	
0105299	DEP	
0105299	HNCPA	
0105299	FA	
0105299	HgE	
0105299	HC8	
0105299	HCE	
0105299	MDM	
0105299	PBS	17.00
0105299	4CPPE	
0105299	AGE	
0105299	ATFT	
0105299	124TLE	
0105299	H	
0105299	AGE	185.00
0105299	BEHP	
0105299	DRGF	
0105299	PA	
0105299	ANT	
0105299	BCE	225.00
0105299	13DCB	
0105299	FLR	
0105299	12TCB	
0105299	BCIPF	
0105299	23TCB	
0105299	P	
0105299	HCBZ	
0105299	42PPE	
0105299	ECEN	
0105299	DAP	

Page	Line
0105299	IC
0105299	PGI
0105299	CSE
0105299	SCHEP
0105299	RLD
0105299	DEB:1
0105299	ACIF
0105299	SEE
0105299	14DCB
0105299	RG
0105299	CRY
0105299	BKFA
0105299	ACH
0105299	OMP
0105299	12DFH
0105299	237313
0105299	BAA
0105299	HCCP
0105299	BEP
0105299	I
0105299	PBE
0105299	CPE
0105299	ZCH
0105299	BBFA
0105299	NNNA
0105299	CSE

INVOICE

To:

Attn:

Our Lab # : 0105300
Your Sample ID: HIRAY
Sample Matrix: SOH

Invoice No.: 0103193

Invoice Date: 05/30/9

INVOICE SUMMARY: Test Charges: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105300	ECE	225.00
0105300	I	
0105300	12ECB	
0105300	P	
0105300	PCEN	
0105300	14DCB	
0105300	DAA	
0105300	BUFA	
0105300	BTB	
0105300	13CEB	
0105300	2378TD	
0105300	4CPPE	
0105300	BKFA	
0105300	KAP	
0105300	124TEB	
0105300	FA	
0105300	ACH	
0105300	DMF	
0105300	SEP	
0105300	FLG	
0105300	CRY	
0105300	S&E	
0105300	HB	
0105300	HCE	
0105300	NNCPA	
0105300	12CPH	
0105300	4EPPE	
0105300	HCEZ	
0105300	24PHY	
0105300	HCB	

Lab#	Test	Fee
0105300	DNGL	
0105300	POCI	
0105300	COI	
0105300	HBLE	
0105300	AGE	135.00
0105300	SGNH	
0105300	ACHP	
0105300	PLE	
0105300	C/E	
0105300	BCIFE	
0105300	BEFF	
0105300	HMFM	
0105300	AGE	
0105300	HqE	
0105300	FBS	19.00
0105300	H	
0105300	C/E	
0105300	TP	
0105300	DBPT	
0105300	BCHIF	
0105300	DEF	
0105300	BaE	
0105300	ANT	
0105300	330CB	
0105300	DEA	
0105300	FA	

INVOICE

To:

Attn:

Our Lab # : 0105301
Your Sample ID: HWAY
Sample Matrix : SOIL

Invoice No.: 0103192

Invoice Date: 05/30/98

INVOICE SUMMARY: Test Charge: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105301	ARPE	
0105301	TC	
0105301	H	
0105301	HCLP	
0105301	DEF	
0105301	240IT	
0105301	12DPH	
0105301	4CPPE	
0105301	SeE	
0105301	GBFA	
0105301	HqE	
0105301	124TCP	
0105301	AsE	185.00
0105301	MMFH	
0105301	ACH	
0105301	DMP	
0105301	PBE	
0105301	BaE	
0105301	HCB	
0105301	ACHP	
0105301	24ENT	
0105301	FLR	
0105301	BEHP	
0105301	DNOP	
0105301	14DCB	
0105301	237STD	
0105301	DEG	
0105301	60MIP	
0105301	13FHA	
0105301	SCEN	

Lab#	Test	Fee
0105301	GDPT	
0105301	CHE	
0105301	C-E	
0105301	BBP	
0105301	HCEZ	
0105301	HBDFB	
0105301	PBS	15.00
0105301	AGE	
0105301	CSICB	
0105301	BAP	
0105301	BCE	625.00
0105301	13DCB	
0105301	BID	
0105301	PA	
0105301	HE	
0105301	P	
0105301	ANT	
0105301	BAG	
0105301	FA	
0105301	IP	
0105301	CRY	
0105301	12DCB	
0105301	BKFA	
0105301	I	
0105301	HCE	
0105301	BCIPE	

INVOICE

To:

Attn:

Our Lab # : 0105302

Invoice No.: 0103200

Your Sample ID: H106Y

Sample Matrix : SOL

Invoice Date: 05/30/90

INVOICE SUMMARY: Test Charges: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105302	P	
0105302	120CR	
0105302	CdE	
0105302	HCBZ	
0105302	CrE	
0105302	DEHP	
0105302	FA	
0105302	14DCB	
0105302	PAG	
0105302	CR	
0105302	33DCB	
0105302	DBFT	
0105302	NNMA	
0105302	PA	
0105302	AHT	
0105302	4BFPE	
0105302	12DFH	
0105302	237STD	
0105302	AqE	
0105302	HqE	
0105302	PEE	19.00
0105302	AsE	105.00
0105302	BqE	
0105302	130CB	
0105302	EEF	
0105302	RAF	
0105302	IP	
0105302	DBA	
0105302	EGHIF	
0105302	H	

Lab#	Test	Fee
0105302	HCE	
0105302	HCCP	
0105302	BBFA	
0105302	FHE	
0105302	SeE	
0105302	CHF	
0105302	24ENT	
0105302	FLP	
0105302	DNCP	
0105302	BBFA	
0105302	BCE	225.00
0105302	HNPM	
0105302	I	
0105302	ACH	
0105302	HCE	
0105302	RCEN	
0105302	12-TCB	
0105302	BCIFE	
0105302	24ENT	
0105302	RIG	
0105302	2CH	
0105302	DEP	
0105302	ACHP	
0105302	HNCPA	
0105302	NE	
0105302	4CPPE	

INVOICE

To:

Attn:

Our Lab # : 0103303
Your Sample ID: H12AY
Sample Matrix : SOIL

Invoice No.: 0103201

Invoice Date: 05/30/98

INVOICE SUMMARY: Test Charges: 429.00 429.00
Additional Charges:

\$ 429.00

Total \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105303	BKFA	
0105303	ACH	
0105303	B+PP	
0105303	3JOCB	
0105303	2CH	
0105303	TCIPE	
0105303	12DCB	
0105303	BGFa	
0105303	BAP	
0105303	I	
0105303	DMOP	
0105303	CRY	
0105303	HCCP	
0105303	HNMA	
0105303	AsE	185.00
0105303	BaE	
0105303	NB	
0105303	CPE	
0105303	12DFH	
0105303	HEB	
0105303	14ICB	
0105303	GAA	
0105303	HgE	
0105303	NCE	
0105303	HNMPA	
0105303	DEP	
0105303	HNPH	
0105303	PLE	
0105303	H	
0105303	124TCB	

LABS	Test	Price
0105303	PERIF	
0105303	PA	
0105303	ANT	
0105303	CdE	
0105303	BID	
0105303	PA	
0105303	24DNT	
0105303	S&E	
0105303	AqE	
0105303	FLR	
0105303	PBS	19.00
0105303	IP	
0105303	4CPFE	
0105303	HC&Z	
0105303	DMF	
0105303	1300LB	
0105303	DBA	
0105303	24DNT	
0105303	4PPFE	
0105303	P	
0105303	DBPT	
0105303	RCEM	
0105303	EPF	
0105303	ACHP	
0105303	2376ID	
0105303	RCE	225.00

INVOICE

To:

Attn:

Our Lab # : 0105304
Your Sample ID: HIMA7
Sample Matrix : SOIL

Invoice No.: 0103202

Invoice Date: 05/30/9

INVOICE SUMMARY: Test Charge: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105304	24PMT	
0105304	ANF	
0105304	HB	
0105304	DEF	
0105304	14DCB	
0105304	ACHP	
0105304	BCE	725.00
0105304	4CPPE	
0105304	PA	
0105304	BCEN	
0105304	124TCB	
0105304	FLR	
0105304	HCB	
0105304	12CCB	
0105304	NNFN	
0105304	H	
0105304	HqE	
0105304	26DNT	
0105304	See	
0105304	237STD	
0105304	13DCB	
0105304	33DCB	
0105304	BEHP	
0105304	BCIFE	
0105304	HCZ	
0105304	58CPPE	
0105304	MEFA	
0105304	HNCPA	
0105304	BAP	
0105304	IP	

Lab#	Test	Fee
0105304	HCEP	
0105304	GLPT	
0105304	PGE	18.00
0105304	MGF	
0105304	AdE	
0105304	PGE	
0105304	BGFA	
0105304	GLE	
0105304	BGA	
0105304	CRY	
0105304	DNOP	
0105304	HCE	
0105304	12LPH	
0105304	BID	
0105304	BBP	
0105304	FA	
0105304	P	
0105304	DBA	
0105304	NRMA	
0105304	BGHIP	
0105304	ACH	
0105304	I	
0105304	CdE	
0105304	CdE	
0105304	AsE	185.00
0105304	2CB	

INVOICE

To:

Attn:

Our Lab #: 0105305
Your Sample ID: H199Y
Sample Matrix: SOIL

Invoice No.: 0103203

Invoice Date: 05/30/99

INVOICE SUMMARY: Test Charges: 429.00 429.00
Additional Charges:

\$ 429.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105305	H	
0105305	120CB	
0105305	23781D	
0105305	124YCB	
0105305	HCE	
0105305	BBP	
0105305	EGHIF	
0105305	BCIFE	
0105305	HCB	
0105305	320CB	
0105305	HEHF	
0105305	18484	
0105305	141CB	
0105305	NCEN	
0105305	BCE	325.00
0105305	24DHT	
0105305	BAA	
0105305	CRY	
0105305	FLR	
0105305	I	
0105305	IP	
0105305	130CB	
0105305	DBA	
0105305	ABFA	
0105305	HCBZ	
0105305	P4	
0105305	HCLF	
0105305	ACFFE	
0105305	DEF	
0105305	0105305	

Lab#	Test	Fee
0105305	ACTH	
0105305	GHF	
0105305	CLE	
0105305	ACTH	
0105305	2-DMIT	
0105305	ACTH	
0105305	PEE	
0105305	S&E	
0105305	BRP	
0105305	HB	
0105305	DMCP	
0105305	PBS	19.00
0105305	LDPH	
0105305	HqE	
0105305	CCE	
0105305	FA	
0105305	ZCH	
0105305	RID	
0105305	BRFA	
0105305	4GPPE	
0105305	R&E	
0105305	HRFM	
0105305	P	
0105305	AqE	
0105305	A&E	155.00
0105305	DRFT	

- INVOICE -

To:

Attn:

Our Lab # : 0105306
 Your Sample ID: HIBAY
 Sample Matrix : SOH

Invoice No.: 0103204

Invoice Date: 05/30/01

INVOICE SUMMARY: Test Charge: 429.00 429.00
 Additional Charges:

\$ 427.00

TOTAL \$ 429.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105306	24DHT	
0105306	2CH	
0105306	124TCB	
0105306	HCB	
0105306	4CPPE	
0105306	HCCP	
0105306	DEP	
0105306	H	
0105306	BOHIF	
0105306	330CB	
0105306	ACMP	
0105306	AJE	
0105306	F.R	
0105306	AMT	
0105306	MTMA	
0105306	ASE	125.00
0105306	DEA	
0105306	BCEN	
0105306	BAF	
0105306	IF	
0105306	BAP	
0105306	CRY	
0105306	BCIFE	
0105306	HqE	
0105306	BAE	
0105306	I	
0105306	BKFA	
0105306	SeE	
0105306	HCBZ	
0105306	PA	

Lab#	Test	Fee
0105306	12ICB	
0105306	DBPT	
0105306	FA	
0105306	P	
0105306	ACH	
0105306	HG	
0105306	PLE	
0105306	BBP	
0105306	PCE	725.00
0105306	14CCB	
0105306	REMP	
0105306	DNOP	
0105306	NNFM	
0105306	12OPH	
0105306	4BFFE	
0105306	CPE	
0105306	2378TD	
0105306	CdE	
0105306	26HNT	
0105306	12CCB	
0105306	HNDFa	
0105306	HCE	
0105306	BID	
0105306	DMP	
0105306	PBS	19.00
0105306	BBFA	

- INVOICE -

To:

Attn:

Our Lab # : 0105307

Invoice No.: 0103205

Your Sample ID: HWAY

Invoice Date: 05/30/00

Sample Matrix : SOIL

INVOICE SUMMARY: Test Charge: 200.00 200.00
Additional Charges:

\$ 200.00

TOTAL \$ 200.00

ITEMIZED TEST CHARGES:

Lab#	Test	Fee
0105307	11PCE	
0105307	SRR	
0105307	12PCE	
0105307	HR	
0105307	CE	
0105307	PDCB	
0105307	CT	
0105307	13SRB	
0105307	BEZ	
0105307	1112TE	
0105307	1122TE	
0105307	4CLE	
0105307	CR	
0105307	BY	
0105307	22TCP	
0105307	CHART	
0105307	112TCE	
0105307	ICFH	
0105307	CDBN	
0105307	FICB	
0105307	HRB	
0105307	TCE	200.00
0105307	IFB	
0105307	CHART	
0105307	CH	
0105307	CLT	
0105307	FCT	
0105307	DON	
0105307	MFCE	
0105307	123TF	

Lab#	Test	Fee
0105307	TGL	
0105307	BECE	
0105307	ECM	
0105307	BB	
0105307	11BCF	
0105307	13BCF	
0105307	12ICF	
0105307	13CF	
0105307	PCF	
0105307	EB	
0105307	PLST	
0105307	H	
0105307	PPB	
0105307	1100	
0105307	C	
0105307	103	
0105307	ODCF	
0105307	1120C	
0105307	1117CE	0.00
0105307	VC	
0105307	OX	
0105307	124TMB	
0105307	123TCB	
0105307	OCM	
0105307	MX	
0105307	C120	
0105307	124TCB	

Appendix H
WATER WELL SURVEY

**WELL INVENTORY
ALABAMA AIR NATIONAL GUARD FACILITY
DANNELLY FIELD MUNICIPAL AIRPORT
MONTGOMERY, ALABAMA**

Prepared for

**AIR NATIONAL GUARD READINESS CENTER
ANDREWS AIR FORCE BASE, MARYLAND**

Submitted by

**CH2M HILL, INC.
2567 FAIRLANE DRIVE
MONTGOMERY, ALABAMA**

July 1995

Introduction

As part of the Site Investigation for the Alabama Air National Guard (ANG) at Dannelly Field in Montgomery, Alabama, a well inventory was conducted. The purpose of the well inventory is to identify potential receptors that may potentially be affected by compounds that may be identified during the Site Investigation.

The inventory was conducted for an area extending 1 mile out in all directions from the ANG Dannelly Field Facility. The estimated aerial extent of the well inventory is shown graphically in Figure 1. In addition, all public water supply wells located within a 5-mile radius at the ANG were identified.

Methodology

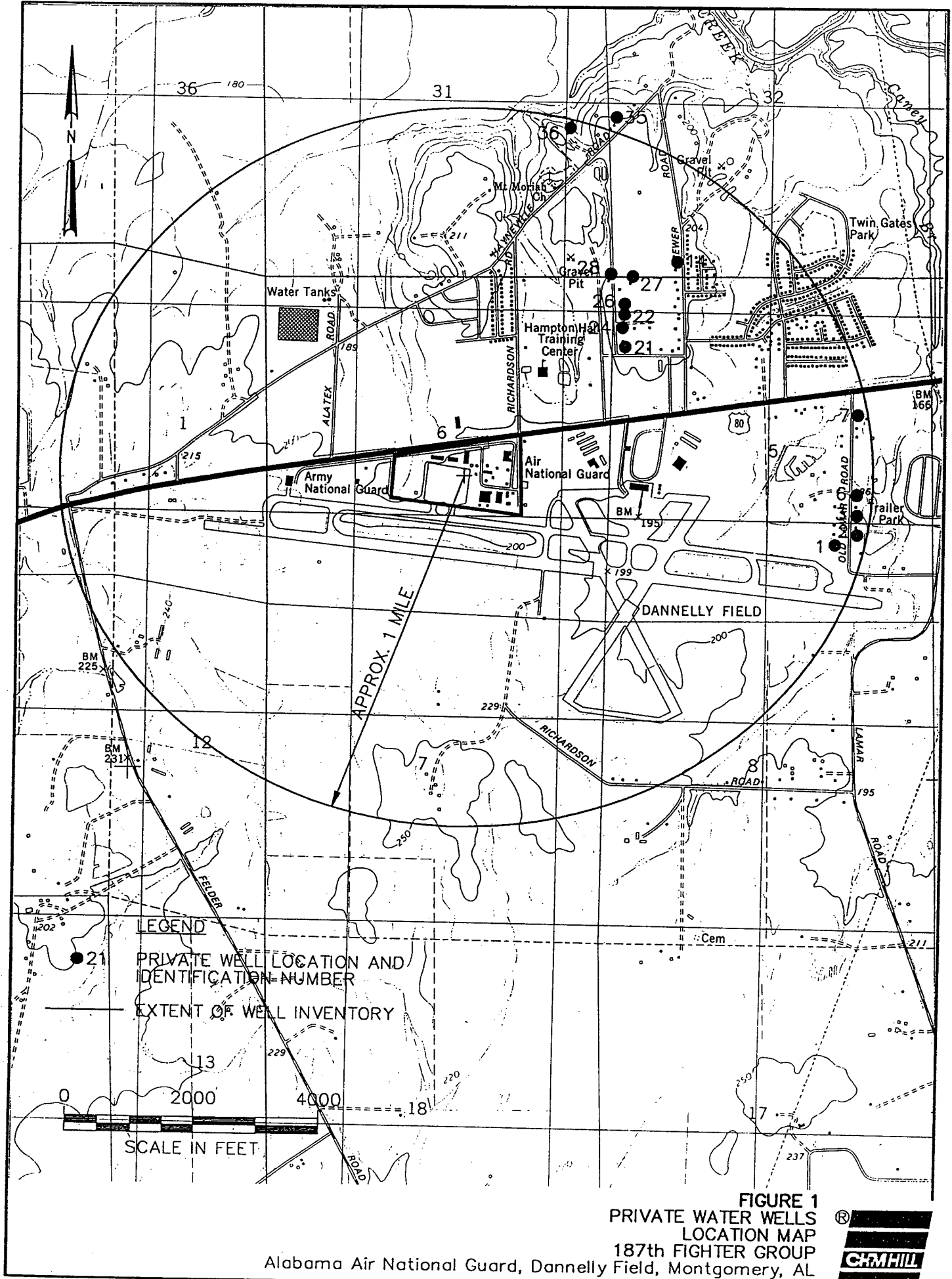
Initially, the study area was identified on a United States Geological Survey (USGS) 7-1/2 minute topographic quadrangle. This map was used to identify the well inventory area and as an aid to locate households and businesses currently using water not supplied by the City of Montgomery.

Before the door-to-door survey, a plat of the area's municipal water supply systems, supplied by the Montgomery Water Board, was reviewed. To supplement the review process, a windshield survey was conducted within the 1-mile radius of the study area. Both recent and more established developments were identified, looking for pump houses and other evidence of private water usage. On the basis of the plat and the assumption that the established developments are more likely to use private water, they were targeted for the door-to-door survey.

The door-to-door survey was conducted at the households identified during the windshield survey. The interviewers visited 43 households within the area shown in Figure 1. The interviewers repeatedly tried to talk to several residents, but some were not at home during the survey. However, the survey team was able to establish their water source through discussions with surrounding neighbors.

Results

The water use in the area is a combination of municipal water systems and privately owned wells, with municipal water being the primary source. The private wells identified are installed in either the Eutaw aquifer (deep well) or in shallow sand and gravel beds located within the terrace deposits (shallow well). Many of the respondents were unsure



of the actual depth of their wells, thus making it difficult to obtain an exact number of deep and shallow wells located within the area. Additionally, several residents indicated that they obtained their water supply from naturally occurring springs and artesian wells located within the study area.

The results of the well inventory are summarized below:

Operating wells	17
Abandoned wells	15
Naturally occurring springs and artisan wells (used as a water source)	2

Table 1 lists the summary of the door-to-door survey. Figure 1 shows the estimated aerial extent of the well inventory area as well as the location of the operating wells, abandoned wells, and springs. Each identified operating well and spring delineated in Table 1 was assigned a number corresponding to the numbered locations shown in Figure 1. The operating wells are identified in Figure 1 by circles, abandoned wells as triangles, and the spring (water supply) as a square. Figure 2 shows the location of public water supply wells operated by Montgomery Water Board.

Discussion

Two main areas are shown on the east and northeast sides of the ANG as being served by privately owned water sources (Figure 1). One well was also identified southwest of the ANG, but it is solely used for watering livestock (Well 19, Figure 1). The City of Montgomery is currently extending its water service in both of the private water usage areas. Residents are or will be given the opportunity to switch over to municipal water service. Furthermore, the Montgomery Airport Authority is actively purchasing property located within the 1-mile radius and tearing down the existing dwellings, thus reducing the number of private wells. This purchasing, coupled with the increasing availability of municipal water, will mean a continued reduction of private water users within the 1-mile radius.

The area shown to the northeast of the ANG along Old Hayneville, Brewer, and Rich Roads shows a concentration of private water users. The wells found in this area are screened at various depths, reportedly ranging from 40 ft to more than 200 ft. Additionally, a spring and a well under artesian conditions were identified in this area.

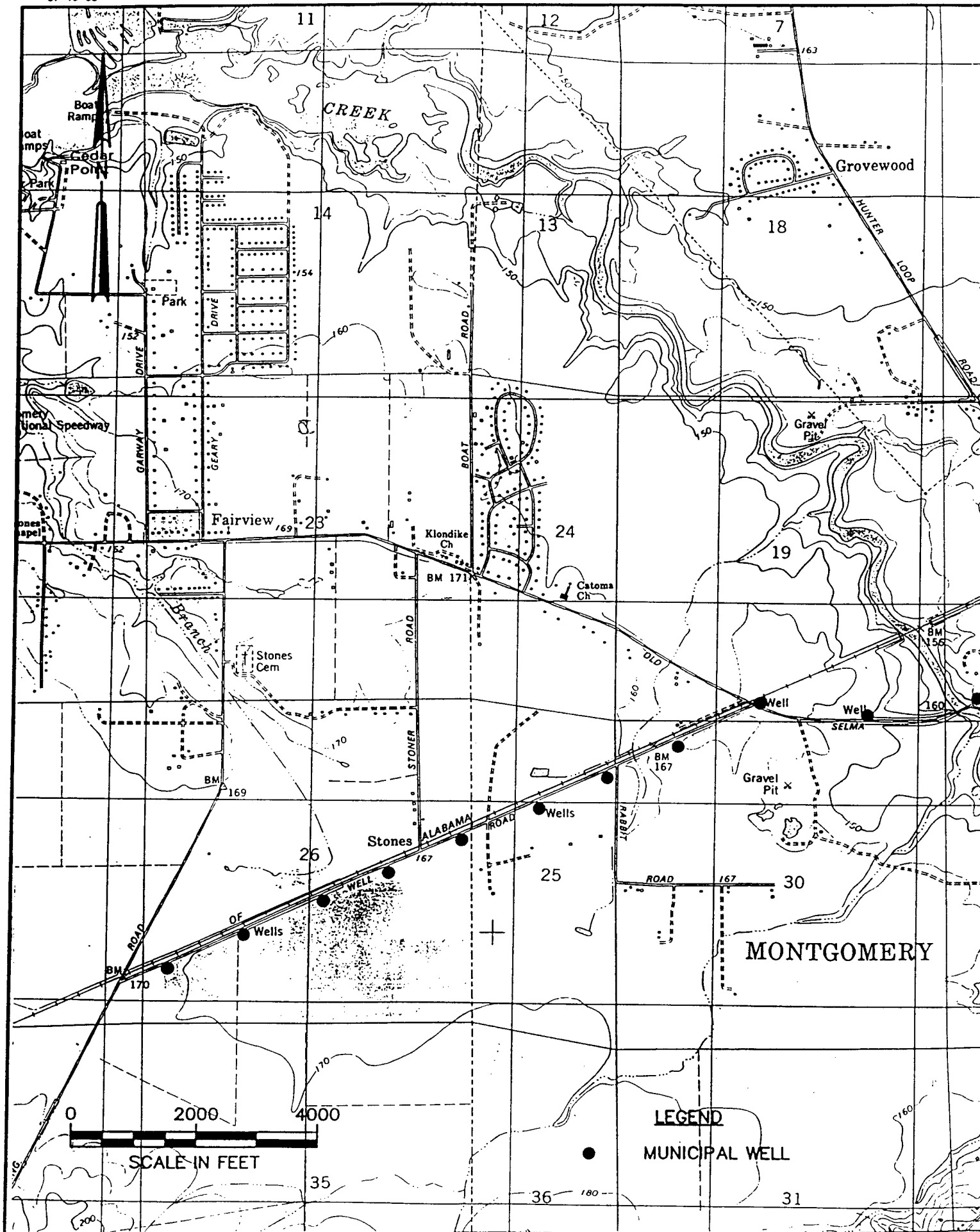
Table 1
Dannelly Field, Montgomery, Alabama
Source Summary

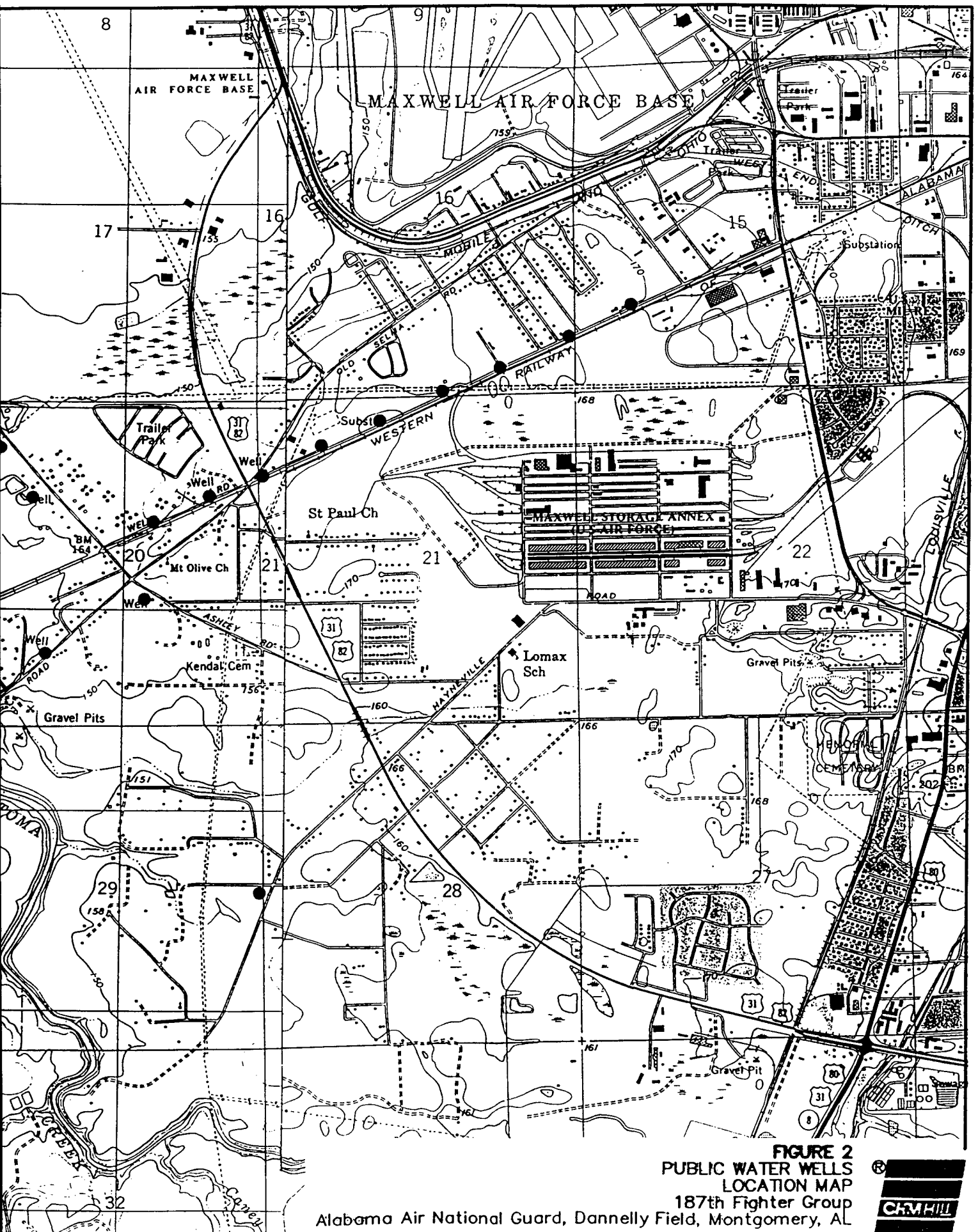
Identification Number	User Address	Source	Use	Approximate Depth, (ft)
1	4620 Old Hayneville Rd	spring	consumption/irrigation	ground surface
2	4560 Old Hayneville Rd	well	consumption/irrigation	>200
3	3915 Brewer Rd	well	consumption/irrigation	200
4	4328 Brewer Rd	well	irrigation	80
5	4340 Brewer Rd	well	consumption/irrigation	>150
6	4412 Brewer Rd	well	consumption/irrigation	unknown
7	4420 Brewer Rd	well	consumption/irrigation	40
8	4458 Rich Rd	well	consumption/irrigation	>150
9	4460 Rich Rd	well	consumption/irrigation	unknown
10 ^a	4506 Rich Rd 4512 Rich Rd	well	consumption/irrigation	60 to 70
11	4524 Rich Rd	well	consumption/irrigation	85
12	4530 Rich Rd	well	consumption/irrigation	>200
13	4561 Rich Rd	well	consumption/irrigation	unknown
14	4554 Rich Rd	well ^b	consumption/irrigation	unknown
15	1250 Old Lamar Rd	well	consumption/irrigation	108
16	1180 Old Lamar Rd	well	consumption/irrigation	unknown
17	1185 Old Lamar Rd	well	consumption/irrigation	65
18	1145 Old Lamar Rd	well	consumption/irrigation	180
19	Rt. #1, Box 22B Hope Hull, AL 36043 (334) 286-0931 ^c	well	watering livestock	unknown

^aWell serves both residences

^bWell under artesian conditions

^cOwner's contact address and phone number





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The area to the east of the ANG also shows a concentration of privately owned wells. The wells in this area (Old Lamar Road) are screened at various depths and reportedly range from 65 ft to 180 ft. However, a number of the residences did not know the depth of their wells. The wells in this area probably are screened within the Eutaw Formation below the Mooreville chalk.

All of the private well (deep and shallow) and spring water users were asked to comment on the quality of their water. They all considered the water to be superior to the municipal source and noted a reluctance to switch. There has been no apparent decline in the water quality over years of consumption.

The remaining areas within a 1-mile radius of the site are served by a public municipal water system. The interviewers visited a few households in each of these areas and learned that the areas are served by these water systems. Therefore, they did not visit the remaining households in each area.

Within a 5-mile radius of the ANG installation, the Water Works and Sanitary Sewer Board of the City of Montgomery operates the West Well Field. The wellfield is located primarily along Foshee and Well Roads at a distance ranging from 2 to 5 miles north of the ANG. The wellfield (Figure 2) includes 29 wells that currently supply about 36 percent or 21 million gallons per day of potable water for the Board. The wells are typically multiple aquifer completions that withdraw water from the Eutaw, Gordo, and Coker Formations at an average depth of approximately 700 ft.

The Water Board supplies about 5 percent of the remaining balance of its water supply from the North Well Field and about 59 percent from the C. T. Perry Plant, which treats water from the Tallapoosa River. The North Well Field and the Perry Plant's raw water sources are located in the northern and northeastern Montgomery areas, respectively.

Appendix I
TOXICITY VALUES OF SELECTED
CONTAMINANTS

APPENDIX I
Toxicity Profiles for Human Health Effects
for Chemicals of Potential Concern
Alabama ANG--Dannelly Field

ACETONE

Acute exposure to acetone can cause irritation of the eyes, skin, and respiratory tract. Depression of the central nervous system and narcosis can occur after inhalation of high concentrations of acetone. Dryness of the mouth and throat, dizziness, nausea, incoordination, loss of speech, and even coma have been described in some cases of workers exposed occupationally to acetone. In a chronic study reported by EPA (IRIS, 3/1/88), kidney damage was observed in albino rats administered acetone by oral gavage. Kidney damage and metabolic changes have been noted in humans who ingested acetone (Sax, 1989). Acetone can increase the toxicity of other chemicals, particularly solvents. The hepatotoxicity of carbon tetrachloride can be increased greatly in the presence of acetone.

ANTIMONY

Many antimony compounds irritate the gastrointestinal tract. Acute intoxication with antimony results in severe vomiting and diarrhea. With occupational and inhalation exposure, rhinitis and acute pulmonary edema may occur. The chronic inhalation of some antimony compounds can produce respiratory problems and diseases. Transient spots on the skin have been reported in some workers. Antimony may form stibine gas, which causes hemolysis.

ARSENIC

Acute oral exposure to arsenic can cause muscle cramps, facial swelling, cardiovascular reactions, severe gastrointestinal damage, and vascular collapse leading to death. Sensory loss and hematopoietic symptoms delayed after exposure to high concentrations are usually reversible. Inhalation exposures can cause severe irritation of the nasal lining, larynx, and bronchi. Chronic oral or inhalation exposure can produce changes in skin, including hyperpigmentation and hyperkeratosis; peripheral neuropathy; liver injury; cardiovascular disorders; oral exposures associated with peripheral vascular disease; and blackfoot disease. Arsenic is a known human carcinogen; oral exposures are associated with skin cancer, inhalation exposures with lung cancer. Toxicity varies for different compounds; inorganic trivalent arsenic compounds are usually more toxic than pentavalent compounds; high doses of some inorganic arsenic compounds to pregnant laboratory animals produced malformations in offspring.

BARIUM

Acute ingestion of barium salts can cause prolonged muscular stimulation, gastroenteritis, hypokalemia, and cardiovascular effects such as ventricular fibrillation and extra systoles. Prolonged occupational inhalation has resulted in baritosis--a benign, reversible pneumoconiosis. Toxicity of compounds depends on solubility.

BENZENE

Acute exposure to high concentrations of benzene vapors may cause central nervous system depression, unconsciousness, and fatal cardiac arrhythmias. Benzene is readily absorbed after oral and inhalation exposure. Chronic exposure of workers to low concentrations has been associated with blood disorders. Chromosomal aberrations in bone marrow and blood have been reported in experimental animals and some workers. Benzene has been classified as a Group A Human Carcinogen, based on evidence of carcinogenicity from epidemiological studies and correlations between exposure by inhalation and leukemia.

BENZO[A]ANTHRACENE

No information is available on short-term dermal or inhalation effects. There is no information on systemic effects. PAHs as a group may cause skin disorders and immunosuppressive effects. Evidence exists that benzo[a]anthracene is carcinogenic to laboratory animals through dermal and ingestion exposure routes. Inhalation data are not available. Benzo[a]anthracene may cause skin and lung cancer. No reports exist relating cancer in humans from exposure to benzo[a]anthracene exclusively, but there are reports on exposure from PAH mixtures. This chemical is mutagenic in laboratory experiments. Benzo[a]anthracene may be metabolized into reactive derivatives.

BENZO[A]PYRENE

Acute toxicity for Benzo[a]pyrene appears low when administered by oral or dermal routes to laboratory animals. Prolonged exposure may produce chronic dermatitis and reproductive changes. Repeated oral doses to mice have caused hypoplastic anemia. Induction of cancer is the key toxic endpoint from intermediate and long-term exposure. Benzo[a]pyrene is a constituent of coal tar, which is classified as a Level 1 known carcinogen by IARC and a Level B2 probable carcinogen by the EPA. Ingestion may produce stomach tumors, and inhalation may produce lung cancer. Prolonged skin exposure has been linked to an increase in skin cancer among workers. Benzo[a]pyrene is considered to be the most potent carcinogenic PAH. Benzo[a]pyrene is a mutagen.

BENZO[B]FLUORANTHENE

No acute toxicity information is available. Systemic effects specific to benzo[b]fluoranthene have not been reported. Skin disorders and immunosuppressive effects have been reported for PAH mixtures. Experimental evidence exists that it causes lung and skin cancer in laboratory animals by dermal absorption and intratracheal distillation. There is no evidence of reproductive or teratogenic effects.

BENZO[G,H,I]PERYLENE

Limited information for acute or chronic toxicity is available. It is a liver and skin carcinogen in laboratory animals. Data available are inadequate to determine carcinogenic potential in humans. Benzo[G,H,I]perylene has been reported to produce cocarcinogenic effects when applied to mouse skin along with benzo[a]pyrene.

BIS(2-ETHYLHEXYL)PHTHALATE

(Di(2-ethylhexyl)phthalate or DEHP or BEHP)

In general, low acute toxicity has been reported in experimental animals; accidental acute exposure in man resulted in mild gastric disturbance and catharsis. Chronic exposure at relatively high concentration has retarded growth and resulted in increased liver and kidney weight in experimental animals. Oral administration to rats and mice resulted in increased hepatocellular carcinomas or neoplastic nodules. Classified by EPA as a B2 carcinogen. Some evidence in animals of teratogenic and fetotoxic effects exists. Reproductive effects, decreased fertility and testicular damage have been noted in rodents. This substance is poorly absorbed through skin and is rapidly metabolized.

BROMODICHLOROMETHANE

Bromodichloromethane results from chlorination of precursors in raw water. Toxic effects of bromodichloromethane have been shown in laboratory animals and include sedation and hemorrhage in the kidney, adrenals, lungs, and brain. It is classified as a Group B2 Probable Human Carcinogen by ingestion exposure routes.

BROMOFORM

Acute exposure to high levels of vapor produces irritation of the respiratory tract, pharynx, and larynx, with lacrimation and salivation. Other effects include headache,

listlessness, vertigo, unconsciousness, loss of reflexes, convulsions, and death usually caused by respiratory failure. This substance can cause decreased liver function and histopathological effects in experimental animals. Longer-term exposure to mice by oral administration causes decreased body weight, fatty metamorphosis of the liver, and hepatocellular changes. Inhalation studies with rats show disorders in prothrombin synthesis and glycogenesis in the liver and reduced filtration capacity in the kidney. Bromoform results from chlorination of natural organic precursors in raw water.

CADMIUM

For acute exposures by ingestion, symptoms of cadmium toxicity include nausea, vomiting, diarrhea, muscular cramps, drop in blood pressure, vertigo, loss of consciousness, and possible collapse. Exposure by inhalation can cause respiratory ailments, acute chemical pneumonitis, and pulmonary edema. The major chronic effects in workers are respiratory and renal toxicity. Cadmium bioaccumulates in the kidney, and nephropathy results after critical concentration (around 200 ug/g) is reached. Inhalation can cause chronic obstructive pulmonary diseases. Chronic exposure also affects calcium metabolism. Cadmium is classified as a Group B1 Probable Human Carcinogen, by inhalation routes.

CHLOROFORM

Acute toxic exposure effects of chloroform in humans include respiratory depression, coma, and liver and kidney damage. Chloroform (anesthetic) depresses the central nervous system and may result in cardiac arrest (apparently from sensitization to epinephrine). The chronic toxic exposure effects in animals include liver and kidney damage, fetotoxicity, and malignant tumors.

CHROMIUM

Chromium is an essential micronutrient and is not toxic in trace quantities. Following oral exposure, absorption of chromium (III) is low while absorption of chromium (VI) is high. The major acute effect from oral exposure is renal tubular necrosis. Inhalation of chromate salts can cause irritation, inflammation, and ulceration of nasal mucosa. Chronic exposure to chromium (VI) can result in kidney damage. Inhalation exposures in industrial settings have resulted in damage to the respiratory system and have been associated with excess lung cancers. Exposures to the skin can result in allergic skin reactions in sensitive individuals. Overall, the hexavalent forms are usually more toxic than trivalent forms. Inhaled chromium (VI) is classified in Group A as a human carcinogen.

CHRYSENE

Chrysene is absorbed by oral and dermal doses and accumulates in adipose and mammary tissues. Chronic toxic effects have not been described. It is carcinogenic in laboratory animals exposed to long-term dermal doses. There is limited evidence that chrysene is mutagenic. Epidemiological reports document incidences of skin cancer when exposed to PAH mixtures that included chrysene.

COPPER

Copper is an essential micronutrient and is not toxic in quantities necessary for human health. Acute inhalation exposure to copper dusts can result in symptoms similar to metal fume fever. Exposure to dusts and mists of copper salt results in nasal congestion. Exposure to fumes results in upper respiratory tract irritation, metallic or sweet taste, and skin and hair discoloration. The major chronic toxic effect is hemolytic anemia in some dialysis patients.

DIBENZO[A,H]ANTHRACENE

Oral absorption occurs but there is slow dermal absorption. IARC [1983] has concluded that there is enough evidence that dibenzo[a,h]anthracene is carcinogenic to laboratory animals. In laboratory experiments, oral doses have caused tumors in mice; intratracheal distillation has caused lung tumors in rats and dermal application has caused skin cancer. High doses in laboratory animals have produced fetal deaths.

DIBROMOCHLOROMETHANE

In laboratory animals, dibromochloromethane causes liver changes including fatty metamorphosis, calcification, centrilobular necrosis, and vacuolar changes. Other effects include toxic nephropathy, salivary gland inflammation, and thyroid hyperplasia. It results from chlorination of precursors in raw water. There is some evidence of mutagenicity.

DI-n-BUTYL PHTHALATE

One case of human oral exposure has been reported to cause nausea, vomiting, dizziness, headache, pain and irritation in the eyes, lacrimation, photophobia, and conjunctivitis; there was some renal involvement followed by recovery within 2 weeks. Irritation of eyes and upper respiratory tract has been noted in mice that inhaled aerosols of the compound. Liver and kidney lesions have been observed in mice receiving chronic oral doses. No carcinogenicity data are available. Di-n-butyl

phthalate may cause increased embryotoxicity and teratogenic effects in rats and mice. Testicular atrophy observed in animals may result from disturbances in zinc metabolism.

1,1-DICHLOROETHANE

1,1-Dichloroethane may cause central nervous system depression when inhaled at high concentrations. It is also a skin irritant. It has been classified as a Group C possible human carcinogen by ingestion exposure routes.

1,2-DICHLOROETHANE

CNS depression, lung irritation, and injury to liver, kidney, and adrenals have been reported. Deaths in humans exposed by ingestion or inhalation may result from circulatory and respiratory failure. Chronic exposure can cause liver degeneration and kidney damage in laboratory animals. Eye damage (necrosis of corneal epithelium) has been observed in dogs injected with 1,2-dichloroethane. Repeated exposures have been associated with anorexia, nausea, liver and kidney dysfunction, and neurological disorders in workers. It is carcinogenic in mice and rats exposed orally, and mutagenic in some tests in bacteria, barley, and fruit flies.

1,1-DICHLOROETHENE

1,1-Dichloroethene (Vinylidene Chloride) is rapidly absorbed following oral and inhalation exposure. The liver appears to be the principal target after acute exposures. At high concentrations, inhalation can cause central nervous system depression and unconsciousness. Reports of chronic health effects on workers exposed to 1,1-dichloroethene include liver function abnormalities, neurological and sensory disturbances, weakness, and fatigue. It is described as an "exquisite hepatotoxin" because it is more potent and faster acting than the classic hepatotoxin, carbon tetrachloride. Its structure is similar to vinyl chloride, a known human carcinogen. 1,1-Dichloroethene is classified as a Group C possible human carcinogen.

DICHLOROMETHANE (METHYLENE CHLORIDE)

Dichloromethane acts as a mild narcotic irritating to eyes and upper respiratory passages. Fatalities have been associated with acute or prolonged exposure. In animals chronic exposure can affect the liver and kidney. Dichloromethane may substantially increase carboxyhemoglobin levels, preventing the transfer of oxygen to tissues. Damage to liver and CNS following long-term occupational exposure has been

reported. It is a carcinogen in female rats and male and female mice, is classified as B2 probable human carcinogen by EPA, and is mutagenic in some bacterial tests.

ETHYLBENZENE

Acute inhalation exposure of humans to ethylbenzene concentrations of 435 mg/ml for eight hours has been found to result in sleepiness, fatigue, headache, and mild eye and respiratory irritation.

FLUORANTHENE

Fluoranthene is acutely toxic by oral and dermal absorption. It can cross epithelial membranes and is a defatting agent that may affect the skin. Limited information available. IARC [1983] concluded there is no evidence that fluoranthene is carcinogenic on the basis of available data. When applied to laboratory animal skin simultaneously with other carcinogenic PAHs, it has increased the carcinogenicity of the compound (i.e., cocarcinogenic effects).

FLUORENE

Fluorene may be toxic by inhalation, ingestion, or dermal contact and absorption. Data are inadequate to determine carcinogenic effects [IARC 1983]. No toxicity data are available for humans.

LEAD

Lead is stored in the body in bone, the kidney, and the liver. The major adverse effects in humans caused by lead include alterations in the hematopoietic and nervous systems. The toxic effects are generally related to the concentration of lead in the blood. Blood concentration levels of over 80 ug/dl in children and over 100 ug/dl in sensitive adults can cause severe, irreversible brain damage, encephalopathy, and possible death. Chronic low level exposure to lead can affect the hematopoietic, nervous, and cardiovascular systems. Characteristic effects of chronic lead intoxication include anemia, effects to the immune system, sterility, neonatal mortality, abortion, and morbidity. Children are especially sensitive to low level effects. Acute toxic exposure in humans is characterized by encephalopathy, abdominal pain, hemolysis, liver damage, renal tubular necrosis, seizures, coma, and respiratory arrest. Certain lead salts are classified as Group B2 Carcinogens--Probable Human Carcinogens.

NAPHTHALENE

Inhalation of vapor may cause eye irritation, headache, and confusion. Ingestion may cause abdominal pain, nausea, and vomiting. Skin or eye contact may lead to systemic effects such as bladder irritation, kidney effects, and nemoletic effects such as anemia and decreased hemoglobin. In animal studies, bronchial necrosis was observed in rats. Occurrence of cataracts upon naphthalene vapor and dust exposure has been observed in humans. Subchronic animal studies have shown that oral doses produced cataracts and degeneration of the retina. Dermatitis has been reported with repeated skin exposure. Two studies have reported hemolytic anemia in infants born to women exposed during pregnancy. Studies have not shown that naphthalene is carcinogenic. Naphthalene is commonly found in coal tar and epidemiological studies have shown coal tar to be carcinogenic. The role of naphthalene alone could not be determined. Acute exposures to large doses may cause hemolytic effects (destruction of red blood cells). This effect is most pronounced in individuals with a hereditary deficiency of glucose-6-phosphate dehydrogenase.

NICKEL

Acute exposures to nickel-containing dust may result in chemical pneumonitis. Signs of acute nickel toxicity may include nausea, headaches, vomiting, chest pain, cough, hyperpnea, cyanosis, gastrointestinal and central nervous system effects, weakness, pneumonia, respiratory failure, cerebral edema, and death. Workers chronically exposed to nickel-containing compounds report allergic contact dermatitis and other dermatological effects, rhinitis, and nasal sinusitis and mucosal injury as among the most frequent effects. Nickel compounds implicated as having carcinogenic potential include insoluble dusts of nickel subsulfide and nickel oxides, vapor of nickel carbonyl and soluble aerosols of nickel sulfate, and nickel carbonyl.

PHENANTHRENE

Phenanthrene is an irritant through inhalation and ingestion exposure; it may also be dermally absorbed and an allergen. There is inadequate data for the evaluation of cancer potential in experimental animals. It can cause photosensitization of the skin.

PHENOL

Phenol is corrosive to tissue. Severe eye damage and blindness may result from direct eye contact. Skin contact may produce whitening of skin, burn, or systemic poisoning. Paleness, weakness, sweating, headaches, cyanosis, kidney damage, and death may occur. Chronic phenol poisoning is rare. It induces vomiting, difficulty swallowing,

diarrhea, lack of appetite, headaches, fainting, dizziness, and neural disturbances. Liver and kidney damage may occur. Phenol may promote the effects of certain carcinogens.

PYRENE

Limited information is available. Evidence suggests that pyrene is cocarcinogenic in laboratory animal experiments.

SELENIUM

Acute exposures can produce CNS effects, including nervousness, drowsiness, and convulsions, and eye and nasal irritation. Chronic exposure to selenium-containing compounds by inhalation can result in pallor, coated tongue, gastrointestinal disorders, nervousness, garlic breath, liver and spleen damage, anemia, and mucosal irritation. Discoloration, decayed teeth, skin eruptions, gastrointestinal distress, and loss of hair and nails have been reported in humans exposed orally. In livestock, excess intake can cause blind staggers (impaired vision, weak limbs, respiratory failure) and alkali disease (hair loss, sterility, atrophy of hooves, lameness, and anemia). Embryotoxic and teratogenic in animals. Selenium is carcinogenic in laboratory animals and may be anticarcinogenic and protective in humans. Selenium is an essential element. Its toxicity is related to chemical form.

TETRACHLOROETHENE (PERCHLOROETHYLENE)

Tetrachloroethene can depress the CNS and cause narcosis. It is irritating to mucous membranes and skin and can cause lung edema. Neurological effects on dry-cleaners have been reported. Chronic exposure may result in pathological changes in liver of laboratory animals. It may also affect the kidney. In humans, inhalation exposure may produce irritation of respiratory tract, nausea, headache, sleeplessness, and abdominal pains. Fatalities have been reported. It is carcinogenic in laboratory animals. An increased incidence of cancers among dry-cleaning workers exposed to several solvents has been described.

TOLUENE

Toluene is absorbed in humans following both inhalation and dermal exposure. At concentrations greater than 200 ppm (754 mg/ml), the primary acute effects are central nervous system depression and necrosis. At lower levels, nausea, fatigue, and incoordination have been reported. Chronic exposure to toluene vapors at concentrations of 200 to 800 ppm has been associated with central nervous and peripheral system effects, hepatomegaly, and hepatic and renal function changes.

TRICHLOROETHENE

Trichloroethene (TCE) is a central nervous system depressant after acute and chronic exposure. Oral exposures of humans to single doses of 15 to 25 ml (21 to 35 gm) of TCE have resulted in vomiting, abdominal pain, and transient unconsciousness. Absorption from the gastrointestinal tract is virtually complete and is proportional to concentrations and duration of exposure following inhalation. High level exposure can result in death from respiratory and cardiac failure. Industrial use and contact with TCE as a concentrated solvent is associated with adverse dermatological effects; however, no adverse effects are reported after exposure as a dilute, aqueous solution. Long-term inhalation exposure can affect liver and kidneys in animals. In humans, changes in liver enzyme have been associated with TCE exposure. TCE is classified as a Group B2 Carcinogen--Probable Human Carcinogen.

VINYL CHLORIDE

Acute occupational exposure to high concentrations of vinyl chloride can produce symptoms of narcosis. Respiratory tract irritation, bronchitis, headache, irritability, memory disturbances, and tingling sensations may also occur. Health effects associated with chronic occupational exposure include hepatitis-like liver changes, disturbances in visual and central nervous systems, decreased blood platelets and pulmonary function, and cardiovascular and gastrointestinal toxicity. Vinyl Chloride is classified as a Group A Known Human Carcinogen. Possible relationships between exposure and birth defects and fetal death have been reported. Chromosome aberrations have been reported in exposed workers.

XYLENES

The three xylene isomers, compounds having the same chemical constituents in a different configuration, have similar toxicological properties and are discussed together. Dermal absorption is reported to be minor after exposure to xylene vapor, but may be significant after contact with the liquid. Acute inhalation exposure in humans to high concentrations can depress the central nervous system and irritate mucous membranes. Changes in behavioral tests, manual coordination, balance, and electroencephalographic patterns have been reported in humans from chronic exposure; development of a tolerance to some of these effects has been reported.

ZINC

Zinc is an essential nutrient. The taste threshold to zinc is 15 ppm. Concentrations of soluble zinc salts of 40 ppm impart metallic taste. Acute adverse effects to inhalation

of zinc fumes include metal fume fever. Fever, nausea, vomiting, stomach cramps, and diarrhea may result from acute ingestions. Prolonged ingestion of zinc can result in irritability, muscular stiffness and pain, loss of appetite, and nausea. High levels of zinc in the diet may retard growth and produce defective mineralization of bone.

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NOTE: Health effects may be based on animal studies and do not imply that human exposure will have the same results.

Appendix J
INVESTIGATION-DERIVED WASTE MANAGEMENT

APPENDIX J

Investigation-Derived Waste Management

TASK DESCRIPTION AND PURPOSE

During the SI, 29 drums were filled with generated waste that included drilling cuttings, sludges, groundwater, decontamination water, well development water, plastic, soiled personnel protective equipment, and other disposable items. Some drums contained a combination of the materials listed above. The investigation-derived waste sampling was implemented to reduce the quantity of waste requiring offsite disposal while also verifying that contaminated materials were disposed of properly.

According to "RCRA ARARs: Focus on Closure Requirements," in order for RCRA requirements to be applicable, a Superfund waste must be determined to be a listed or characteristic hazardous waste under RCRA. Sample results were evaluated based on characteristic level criteria only because no evidence exists that listed hazardous waste disposal occurred at the site.

Background samples were obtained and analyzed for the presence of organic and inorganic constituents. Samples were then obtained of borings from Sites 1 and 4 and analyzed for organic constituents. Previous use of the site did not indicate the need to analyze for the presence of inorganics. These samples showed no significant concentrations of organic constituents. Samples were obtained from Site 2 and analyzed for organics and inorganics. Six samples obtained from Site 2 were found to contain significant levels of Trichloroethene. Therefore, wastes from Site 2 will be disposed of as a hazardous waste.

At Site 1 (POL Facility), which contained six underground JP-4 storage tanks, samples were obtained and found to contain greater than 100 ppm total petroleum hydrocarbon (TPH) as deep as 8 feet. Soils containing greater than 100 ppm TPH must be remediated. Aeration of the contaminated soil is recommended.

The remaining drums of waste are suitable for disposal at a properly permitted solid waste landfill.

FIELD PROCEDURES

The disposal method selected for each investigation-derived waste material was based on field observations, field screening (H_{Nu}), and laboratory analyses of soil and water samples. All drums were sealed and labeled by boring and site and were stored in the Base hazardous waste generator storage area.

Appendix C contains the sample results pertaining to investigation-derived waste.

Appendix K
Geologist's Log
Well N-7
Alabama Air National Guard
Dannelly Field Municipal Airport

TABLE 4.—SAMPLE LOGS OF WELLS IN MONTGOMERY COUNTY,
ALA.—Continued

	Thickness (feet)	Depth (feet)
angular to subangular, quartzose, and clay, reddish-brown, pale green, and pale red-purple, sandy, micaceous	10	740
Coker formation:		
Clay, moderate reddish-brown, pale red-purple, and pale green, sandy, micaceous	10	750
Sand, very pale orange, medium- to coarse-grained, angular to subangular, quartzose, ferruginous; clay, varicolored, sandy; and clay, greenish-gray, micaceous, pyritic	40	790

Well N-2—Continued

Well N-7

(Samples described by John C. Scott)
Owner: Alabama Air National Guard Driller: Acme Drilling Co.

Mooreville chalk:		
Chalk, yellowish-gray, silty	11	11
Chalk, yellowish-gray to gray, silty	12	23
Chalk, gray, silty, slightly micaceous	55	78
Chalk, gray, silty, slightly micaceous and glauconitic	14	92
Chalk, gray, silty, slightly micaceous	10	102
Chalk, gray, silty, glauconitic, slightly micaceous, fossiliferous	13	115
Chalk, gray, silty, slightly glauconitic and fossiliferous	10	125
Chalk, gray, sandy, slightly glauconitic and micaceous, fossiliferous	12	137
Eutaw formation:		
Sand, light gray, silty and fine- to medium-grained, angular to subangular, quartzose, sparsely glauconitic and micaceous, fossiliferous	22	159
Sand, light gray, silty and medium- to coarse-grained, angular to subangular, quartzose, fossiliferous, glauconitic, sparsely micaceous	10	169
Sand, light gray, medium- to coarse-grained, angular to subangular, quartzose, glauconitic	13	182
Silt, light gray, sandy, quartzose, glauconitic, sparsely micaceous and calcareous	14	196
Sand, light greenish-gray, fine- to medium-grained, angular to subangular, quartzose, very glauconitic, micaceous	6	202
Sand, light gray, coarse-grained, angular to subangular, quartzose, glauconitic	22	224
Sand, light gray, medium- to coarse-grained, angular to subangular, quartzose, glauconitic, and sandstone, white, calcareous	23	247
Sand, light gray, coarse-grained, angular to subangular, quartzose, sparsely glauconitic	11	258
Sand, yellowish-gray, medium-grained, angular to subangular, quartzose, sparsely glauconitic	21	279
Sand, light gray, medium- to coarse-grained, angular to subangular, quartzose, sparsely glauconitic, and micaceous	12	291

TABLE 4.—SAMPLE LOGS OF WELLS IN MONTGOMERY COUNTY,
ALA.—Continued

	Thickness (feet)	Depth (feet)
Well N-7—Continued		
Sand, light greenish-gray, medium-grained, angular to subangular, quartzose, glauconitic, micaceous, and clay, gray, sandy, micaceous	10	301
Sand, light greenish-gray, silty and medium- to coarse-grained, angular to subangular, quartzose, glauconitic, sparsely micaceous	12	313
Sand, light greenish-gray, silty and fine- to medium-grained, angular to subangular, quartzose, glauconitic, micaceous	31	344
Sand, light gray, medium-grained, angular to subangular, quartzose, sparsely glauconitic, and micaceous	46	390
Sand, light gray, medium- to coarse-grained, angular to subangular, quartzose, sparsely glauconitic and micaceous	37	427
Sand, light gray, coarse-grained, angular to subangular, quartzose, sparsely glauconitic and micaceous	20	447
Sand, light gray, medium- to coarse-grained, angular to subangular, quartzose, sparsely glauconitic, micaceous and pyritic, and clay, gray, sandy, micaceous	10	457
Sand, light gray, coarse-grained, angular to subangular, quartzose, sparsely glauconitic and micaceous	13	470

Well N-11

(Samples described by H. L. Reade, Jr.)
Owner: U. S. Geological Survey (test well GS-9)
Driller: Black Belt Drilling Co.

Mooreville chalk:		
Chalk, yellowish-gray, silty, fossiliferous	20	20
Chalk, greenish-gray, silty, micaceous, fossiliferous	140	160
Eutaw formation:		
Sand, light greenish-gray, coarse-grained, subangular to subrounded, frosted, quartzose, glauconitic, and sandstone, light greenish-gray, calcareous, glauconitic	10	170
Clay, greenish-gray, sandy, micaceous, and sandstone, white, calcareous	10	180
Sand, light greenish-gray, medium-grained, subangular to subrounded, frosted, quartzose, glauconitic, fossiliferous, and clay, greenish-gray, sandy, glauconitic, fossiliferous	40	220
Sandstone, white, calcareous, glauconitic, and sand, light greenish-gray, medium-grained, subangular to rounded, slightly frosted, quartzose, glauconitic	10	230
Sand, light greenish-gray, medium- to coarse-grained, subangular to subrounded, quartzose, glauconitic	10	240
Sand, light greenish-gray, medium- to coarse-grained, subangular to subrounded, slightly frosted, quartzose, glauconitic, and clay, greenish-gray, micaceous	30	270
Sand, light greenish-gray, coarse-grained, subangular to subrounded, frosted, quartzose, glauconitic, fossiliferous	40	310
Clay, greenish-gray, micaceous, and sand, light greenish-		